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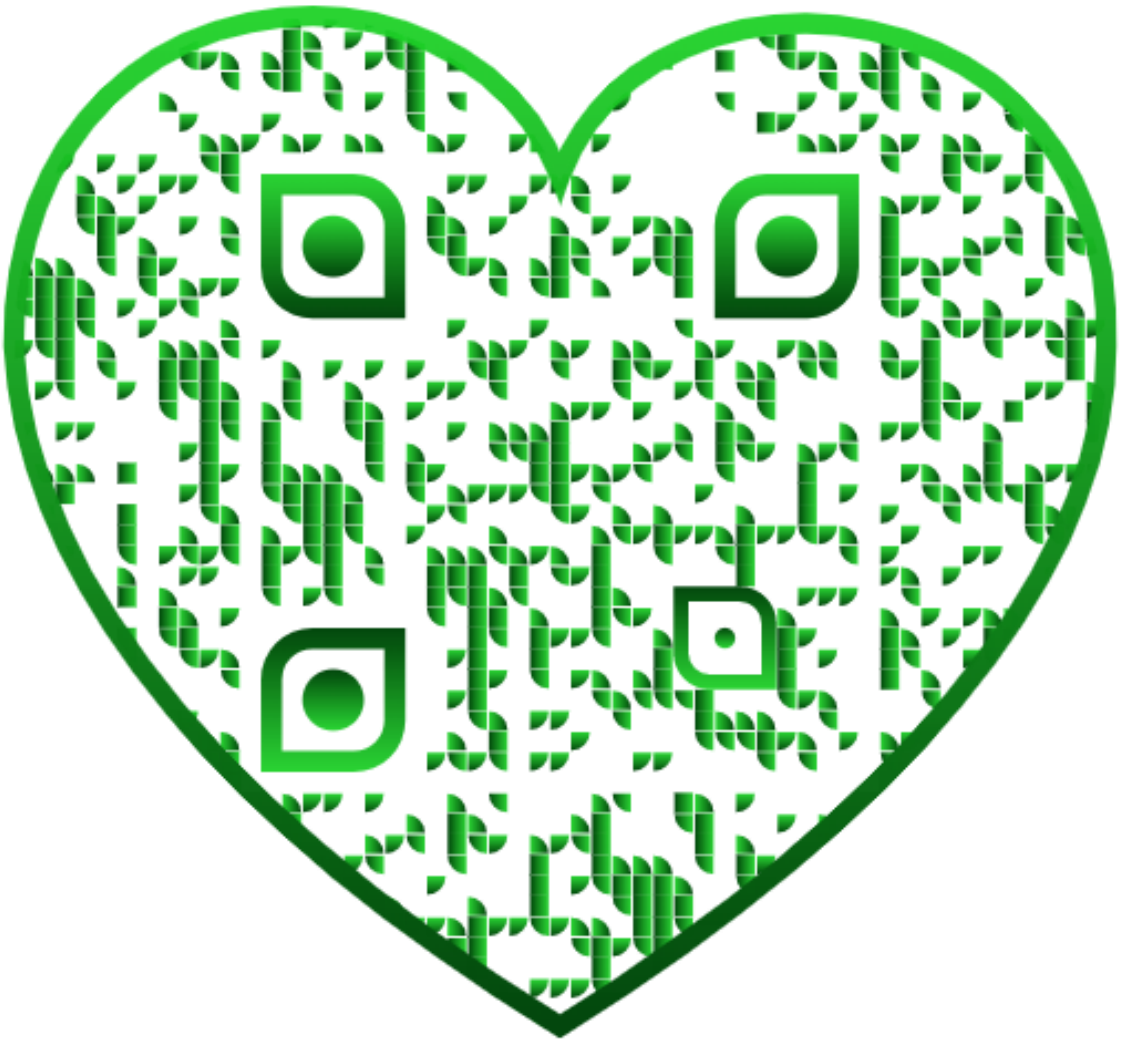

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”My new Carvin HH1X has the ideal neck, fingerboard and fretwire along with the compact size & comfort I love in a headless guitar. The playability and tone are incredible. I started touring with my HH1X the week it was built.”
– Allan Holdsworth

HH2
dual pickup model with fixed bridge
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HH1X
single pickup model with Tremolo
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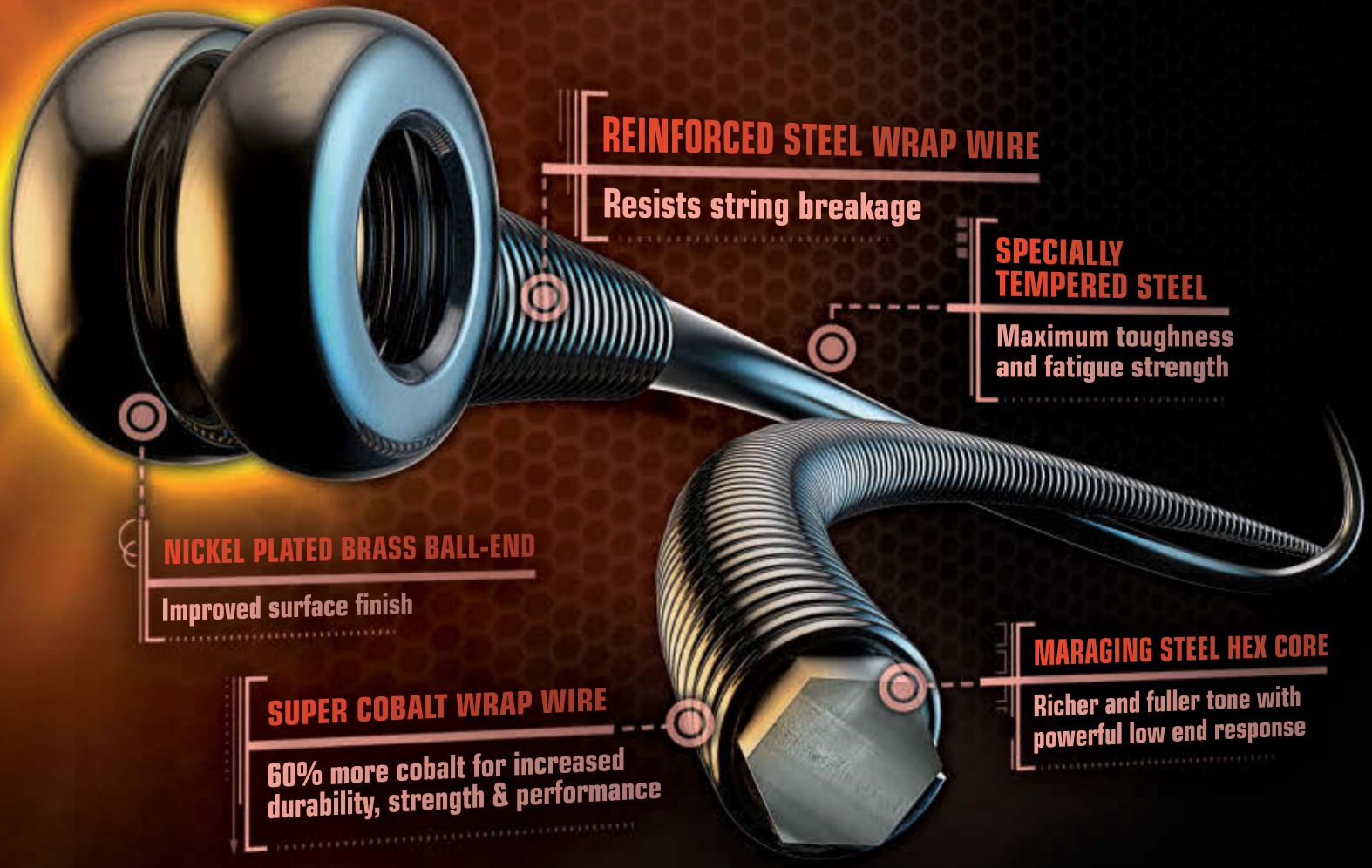

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Gibson MEMPHIS

RICH ROBINSON
1963 ES-335

Continuing Evolution of an Archtop Legend

As guitarist and founding member of the Black Crowes, Rich Robinson has earned nearly as solid a reputation for his love of fine guitars as he has for his juicy, swaggering riffs. The new Rich Robinson ES-335 nails exactly what Rich loves in a vintage early '60s ES-335: killer authentic faded-Cherry looks, creamy yet clear PAF tones, and the added versatility of a genuine Bigsby™ vibrato with traditional "Custom Made" plate to cover the stopbar stud holes.

This "small block" incarnation of the fabled ES-335 is dear to the hearts of many great players, and you'll find its full mojo embodied in the Rich Robinson ES-335. Built to the original ES-335 semi-hollow design with a body made from maple laminates and a solid center block to cut feedback and enhance sustain, this is one of the most adaptable electrics on the planet, excelling at anything from jazz, to pop, to country, to flat-out Black Crowes-certified rock'n'roll. Rich's preferred neck profile makes it superbly comfortable to play, and there's a little extra real estate at the 1.711"-wide nut to give you plenty of room to roam. Load in a BurstBucker 1 at the neck and a slightly hotter BurstBucker 2 at the bridge, dress it all in a luscious aged-Cherry finish given Gibson's exclusive VOS process, with gently aged and period-correct nickel hardware, and pack it in a brown hardshell case with plush charcoal lining and Certificate of Authenticity, this is a classic ES-335 you'll want to get your hands on right away.

4 "Horrible" Guitarists You Should Shut Up and Learn From

BY SHAWN HAMMOND

@PG_shawnh

Admit it: If you're a serious enough player to be a voracious Premier Guitar reader, there's a good chance you're sometimes insufferable to the rest of humanity when it comes to music.

Too many of us can't listen to anything without ripping apart **A)** the "awful" guitar playing, **B)** the fact that guitar isn't the main attraction (or, god forbid, there isn't any guitar—the horror!), **C)** the "god-awful" tones, or **D)** all of the above.

If you catch yourself using that mental No. 2 pencil to fill in the "all of the above" bubble a lot, your own music might well be insufferable, too—at least if you care about originality and finding your own voice.

Your only hope might be to find a way to tear up that mental checklist and be okay with music that pushes you in new directions, regardless of instrumentation. If that makes you think I'm a pathetic excuse for a guitar nut, then you're insufferable and you miss the point: Letting your good-guitar-playing checklist go frees your inhibitions and opens your own music to limitless cool possibilities.

This will be a big step for those of you who are ready to crucify me right now. But if you want to give this idea a whirl, maybe try an intermediate step: Go back and listen with new ears to popular bands or guitarists you've previously dismissed for any or all of the above reasons. Some of it might still be crap, but if you do it right you might see ways you've kind of been a blockhead in the past. I know I have. Here are five "lame" players to start with.

Josh Homme
The Queens of the Stone Age frontman has been a stoner-rock hero for nearly 30 years. But a lot of players say he sucks or is overrated because he doesn't give a flying cuss about traditional sounds or shredding like a mofo. His voice and guitar tones can take some getting used to, but give " ... Like Clockwork" a listen and you'll see how he can create a beautifully sad solo even with a buzzy, skwonky, mid-heavy tone.

Thom Yorke
Radiohead is routinely dismissed as pretentious tripe with shite guitar playing by macho guitarists. And if the band does get any 6-string respect, it's usually for Jonny Greenwood and Ed O'Brien. But Yorke is the band mastermind, and his quirky playing—often on a kind of crappy-sounding nylon-string—is inimitable and off-kilter in a way that'll school you. Check out 2007's "Jigsaw Falling Into Place" for proof.

Annie Clark
St. Vincent, has been covered everywhere from Pitchfork to NPR, so she's a prime target for cranky guitarists. And being both a Berklee dropout and a compositional and tonal agent provocateur only seals her pariah status. But open your mind and check out stuff like "Birth in Reverse," and you'll understand why her lovely vocals and busted-synth tones, fuzzy chord stabs, and lo-fi funk hammer-ons have made her a sensation.

Roland Orzabal (and Phil Palmer).
Am I *really* citing the frontman and studio guitarist for '80s New Wave band Tears for Fears? You bet your peg-legged Girbaud jeans I am. Even today, songs like "Change" are a master class on humanizing electronic tunes. Its drum machines, eerie synths, marimba, bass guitar, and 6-strings that veer from angular, slapback-treated twangs to a robotically funky anti-solo make for a great modern mood piece.

Shawn Hammond
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FEEDBACK LOOP

Small World

Hi,
Hope all is well. I just got the new issue with the D-45 history ["Prewar Perfection: The Martin D-45," June 2014] love it!!! I thought you would get a kick out of this. Mike Longworth was mentioned in the article—I have the Longworth D12-45 in for restore that is in his book (the very first Martin book ever)! He was a good friend of mine and set me up in 1990 as a Martin service center. Here are some pics.

—Tracy Longo,
Ventura, California
(guitartechcorner.com)

Music Schooled

In his column, "Covering Your Basses" [May 2014] Victor Brodén said, "Many music schools focus on genres that are technically more advanced or culturally more sophisticated, but some of those genres have very little to do with actually making a living in today's music industry. I was happy focusing my learning on what the marketplace needed."

He is right. But he is missing the point. Music school isn't a vocational school. You don't go to music school to learn what the marketplace needs. The needs of the marketplace are obvious and you learn them working in the real world. A steady diet of GB gigs—weddings, corporate functions, and Top 40 cover bands—will teach you everything you need to know about earning a living as a musician.

The purpose of music school (and not just music school, but the purpose of exploring advanced or sophisticated styles) is to open your brain, expand your horizons, challenge your preconceptions, and find your voice as a player. You can't make a statement if your solos are clichéd and your phrasing is lame. That's boring.

You need to challenge the status quo, not rehash clichés. You learn to do that when you step out of your comfort zone. When you explore the revolutions in music, be it the classical avant-garde, contemporary jazz, world music, electronica, or whatever, you develop a sophistication and sensitivity that is reflected in your playing. It makes you a better (and more interesting) musician. Studying the note choices that people like Eric Dolphy and John Coltrane made when soloing over modal patterns (that are no different from the modal vamps metal players solo over) teaches you invaluable lessons about phrasing, harmony, tension, release, and composition.

The Beatles listened to everything; Karlheinz Stockhausen, South Indian classical music, Motown. Those styles made it into their music. Imagine if the Beatles never got past Chuck Berry and Elvis. Their music, and our world, would be lacking. If you're lucky enough to go to music school, you are lucky enough to be in an environment where you can explore the exotic and the bizarre. You can experiment, have fun, and do it without destroying your career. You also have access to the masters in disparate styles. Hound them. Take advantage of them. Break down walls and barriers and expand your horizons. And at night, when you are playing gigs to pay your tuition, you will learn everything you need to know about making a living in the music industry.

—Tzvi Gluckin,
Boston, Massachusetts

Keep those comments coming!

Please send your suggestions, gripes, comments, and good words directly to **info@premierguitar.com**.

Socialize with Us!

"@premierguitar @MasteryBridge and Jaguars as well! Here is mine."

—gabriele@ne

"I can listen/watch Nels Cline talk about gear for days. Check out this great rig rundown by @premierguitar youtu.be/7GRSH8yxWjc"

—@crossedwirespod

"When I was 15 some friends and I went to a Jimi Hendrix concert in Philly, this was in 1967 when there was very little security. After the show we went to one of two doors on either side of the backstage area and opened the door and who was standing there but Jimi himself. Even got to shake his hand but stupid me did not get an autograph or pic. Definitely the moment of my life."

—Bruce Rainier

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"It's having a bag of tricks—not only little licks, but different tones that come from effects pedals —and using those to play from the soul."

—Adam Granduciel, p. 67

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Above: Photo by Spady Photography

Hollow body II Flame Maple 10 Too
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On the Cover:
(Left to right) A circa-'66 Guyatone LG-160T Telstar, a late-'60s Greco 950 (aka "the Shrike"), and a 1964 Eko 500/4V.

"It's awesome to learn your favorite players' solos ... but do you know how those solos were created? Scales, scales, and more scales."
— Zakk Wylde, Fret 'n' Wylde, p. 124

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Top: Photo by Ken Settle

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FEATURED

Bows and Bouts

In our latest factory tour (***premierguitar.com/McPhersonTour***), we bring you a three-part video story about acoustic luthier **Matt McPherson**. The Wisconsin-based McPherson has twin passions—guitars and archery—and has been fascinated with the physics of wood since his youth. His seemingly polar-opposite interests turned out to complement each other, leading him to develop forward-thinking designs in both realms. He's also founder and CEO of Mathews Inc., an archery equipment company that's world-renowned for its light carbon-fiber compound bows. The lessons he learned about bow tension and dampening translated to intriguing designs in his flattop acoustics—including cantilevered necks and offset soundholes that facilitate a lengthened soundboard, and his trademark "overpass-underpass" bracing, which he says improves sustain by minimizing vibration-absorption points. Part three of the tour is a one-on-one interview with McPherson, who demonstrates the beautiful tones of his old-meets-new designs and talks about how a 1970s *Tonight Show* interview with a Japanese Johnny Cash impersonator got him thinking about how he could deconstruct bow physics to improve acoustic designs.

LESSONS

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ELECTRIC ÉTUDES
Brian May
By Jamie Humphries

DIGGING DEEPER
Wayne Krantz' "Grid" System
By Levi Clay

New Blog

So much music is dropping out of the center of the universe these days. Don't you wish you had the time to sift through it all? *Premier Guitar* has exciting news: We've created a new music blog called "**Ear to the Ground**" (***premierguitar.com/ettg***) to do it for you. Writer Eric Shea will be scouring the never-ending digital-age social realm daily to bring you the latest and brightest in guitar-centric music, like the new acoustic album from **Buzz Osborne**, *This Machine Kills Artists*. This online-only column is updated constantly with new releases, reviews, bonus tracks, videos, etc. On top of that, we'll still deliver our regular reviews of the big album releases, too. Go online this month to read about **Blondie**'s double-disc *Blondie 4(0)-Ever*, **Rich Robinson**'s *The Ceaseless Sight*, and **Oz Noy**'s *Twisted Blues Vol. 2*.

GUITARDOM'S TOP TWEETS

Just played a blues shuffle at @nbcsnl that I did in my audition 7 years ago. It always takes me right back to that day! #Audition #Guitar

@ScharffIsHere

I am quite excited for tomorrow night's new episode of #portlandia. @TuckandPatti #mayarudolph #bahamaknights

@Carrie_Rachel

Sorry. No. You cannot copyright a descending bass line in a minor key. Stairway is not rip-off of Taurus' Spirit.

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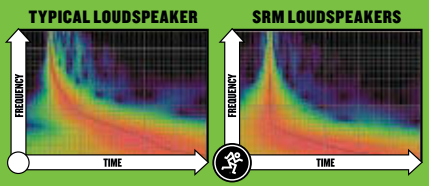

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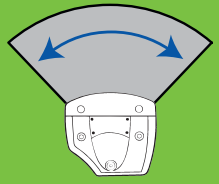

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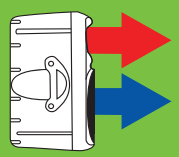

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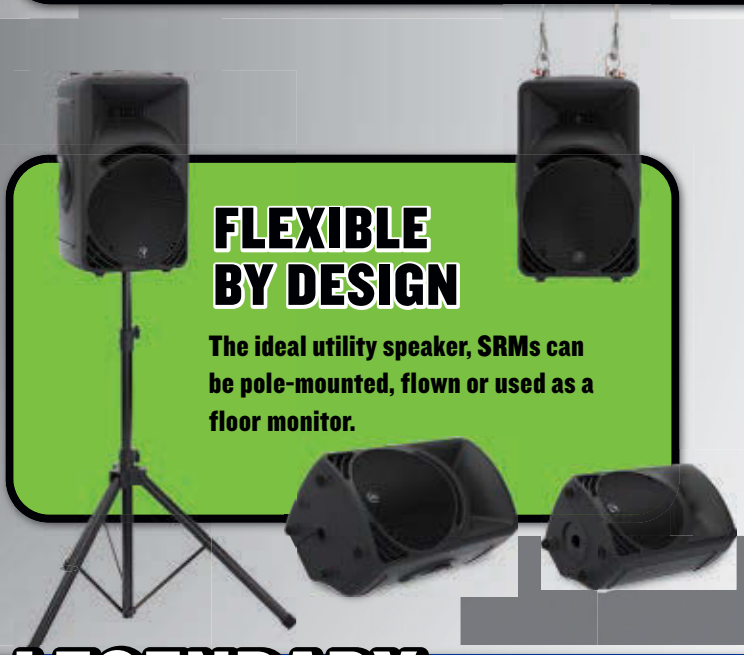

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3
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4
BREEDLOVE
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OPENING NOTES

Justin Broadrick

April 13, 2014
Royale
Boston, MA
Photo by Tim Bugbee

Godflesh founder and industrial-metal pioneer Justin Broadrick works his primary live axe, a 2013 all-stock Blakhart BTK 7 Shadow that is also the basis for his 8-string signature guitar coming later this year.

OPENING NOTES

Bootsy Collins

April 3, 2014
Fox Theatre
Detroit, MI
Photo by Ken Settle

The one and only Bootsy Collins scoops out some funkalicious booty to a Motor City crowd with his No. 1, a Warwick Custom Shop Space Bass that's packed with a quintet combo of custom-designed EMG and Seymour Duncan pickups.

OPENING NOTES

Paul Westerberg

April 11, 2014
Empire Polo Club
Indio, CA
Photo by Lindsey Best

Alt-rock legend and Replacements guitarist Paul Westerberg takes on the Outdoor Theatre stage at Coachella 2014 with his band and the all-original '57 Gibson Les Paul Jr. that he's been favoring for their recent run of gigs.

OPENING NOTES

Danielle Haim

April 11, 2014
Empire Polo Club
Indio, CA
Photo by Lindsey Best

Haim's frontwoman leads the band's Friday afternoon Coachella 2014 set with her No. 1, a 2005 all-stock Gibson SG Standard that she was drawn to in part by "growing up listening to Frank Zappa and Angus Young, and loving their SGs."

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CARLOS SANTANA

FACTOID
"Salmon" sports custom third-generation locking saddles designed by Paul Reed Smith himself.

On April 23, 2014, Premier Guitar *met with Carlos Santana's guitar tech, Ed Adair, before a show at the Ryman Auditorium in Nashville. Adair walked us through Santana's collection of custom PRS guitars, a Pete Cornish- and Teese-stocked pedalboard, and a collection of Holy Grail amps.*

GUITARS

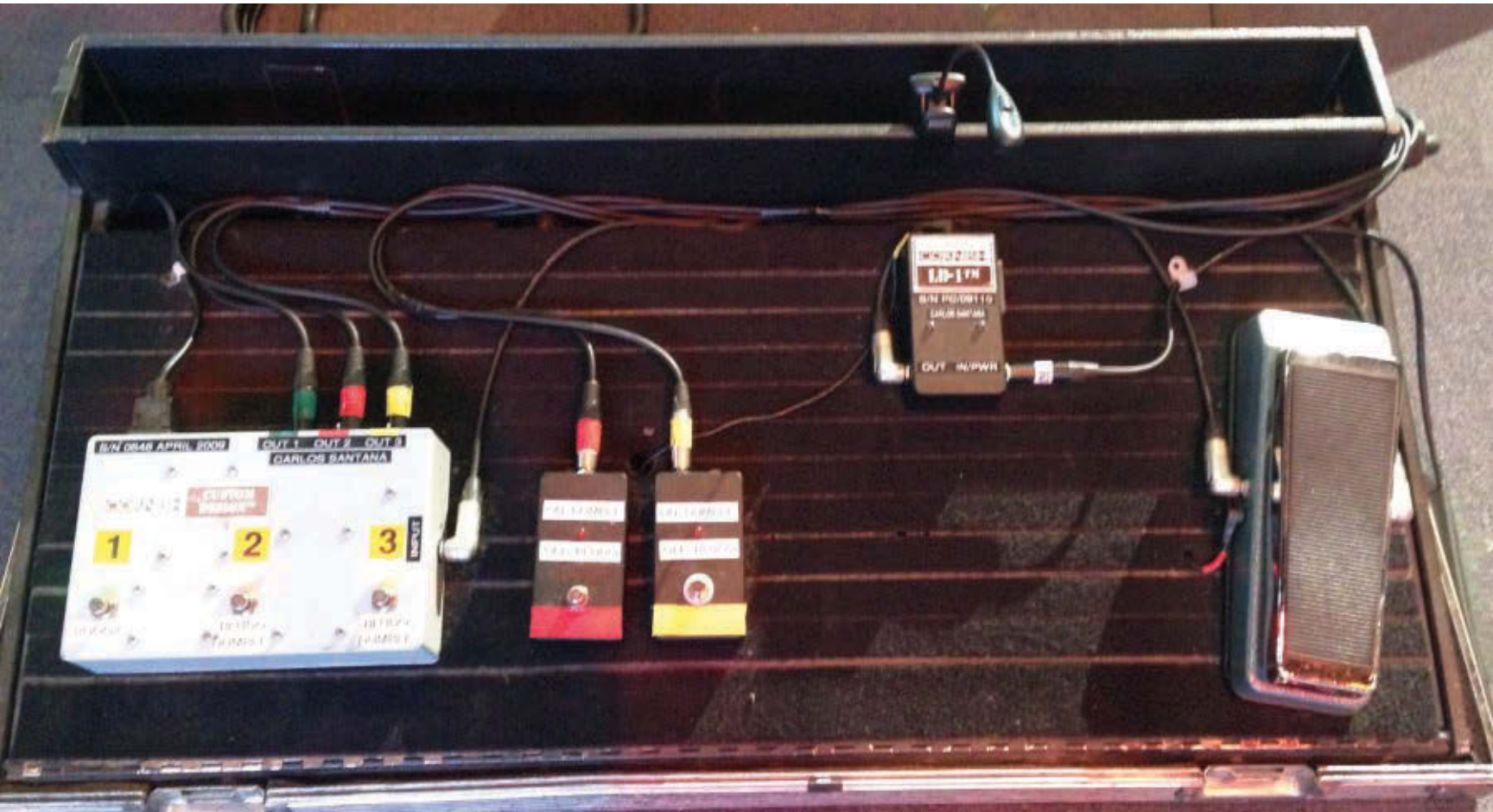
Santana tours with a rack full of his signature PRS models. Although he has a lot of backups, he tends to play the same guitar all night. At the moment, "Salmon" and "Son of Salmon" (not pictured) are in heavy rotation. When Santana wants to bust out some old-school Spanish guitar, he goes to his Jazz Electric Nylon model built by luthier Toru Nittono.

AMPS

After having been retired from use for some time, Santana's original, snakeskin-covered 100-watt Mesa/Boogie is back onstage with the master. Santana also plays through a pair of Dumble Overdrive Reverbs and a pair of Bludotone Universal Tone heads—one of which is a prototype.

EFFECTS

Santana's pedalboard is about as minimal as it gets. He starts with a 50' Canare GS-6 cable with Switchcraft and Neutrik connectors. This runs into a Pete Cornish LD1 line driver and then a Real McCoy Custom RMC4 Wah Pedal made by Geoffrey Teese. From there, the signal goes into a Pete Cornish AC Powered 3 Way Signal Splitter/Mute. The splitter works in conjunction with two custom 2X Amp Selector rack units made by John Suhr.



Pete Loeffler and Dean Bernardini

CHEVELLE

FACTOID
Bassist Dean Bernardini has a background as a visual artist and helps design Chevelle's stage setup.

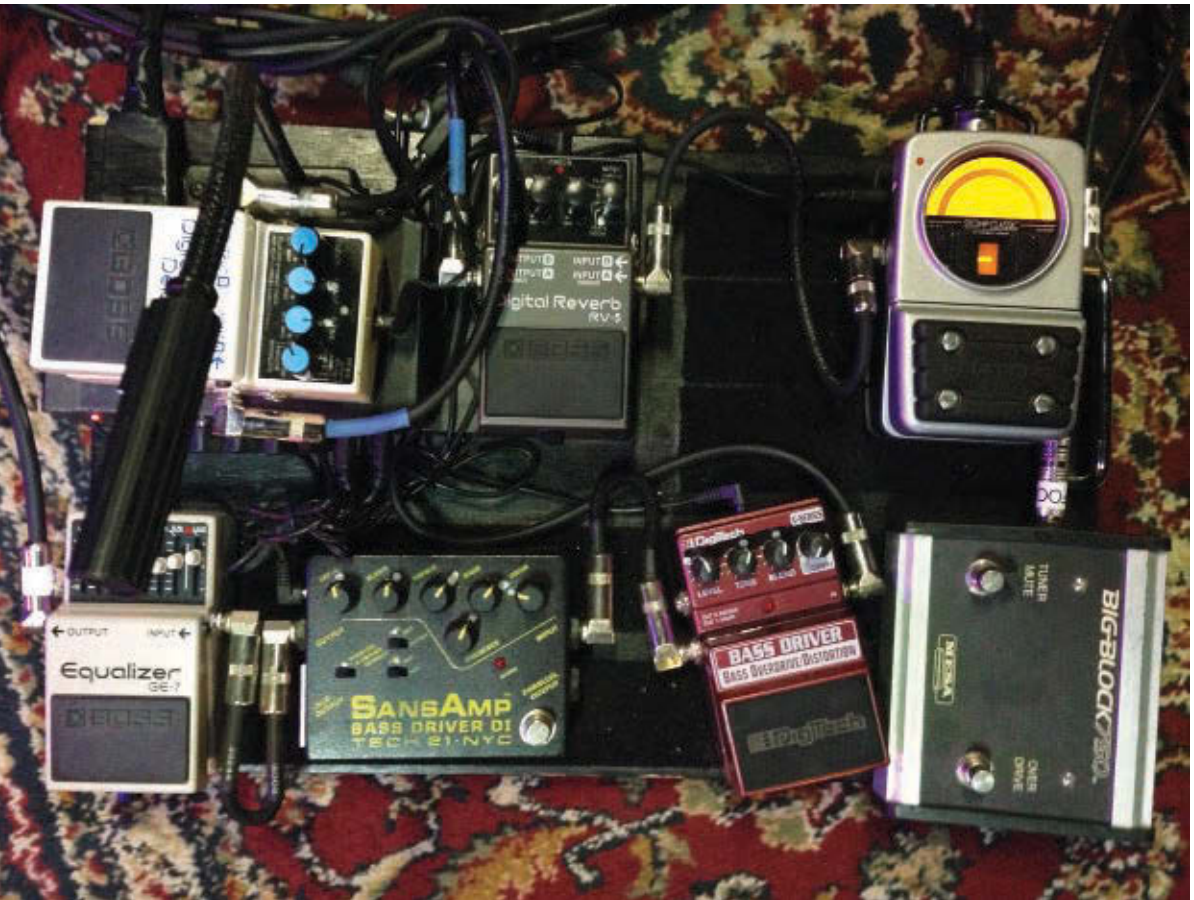
On April 22 in Nashville, Premier Guitar *met with guitarist Pete Loeffler and bassist Dean Bernardini of the band Chevelle before their sold-out show at the Cannery Ballroom. Loeffler gave us the lowdown on tuning to C and answered questions posted by our Facebook followers. Bernardini showed us some cool mods on his Ibanez basses and described how to make a stage look appropriately creepy.*

PETE LOEFFLER'S GEAR

Guitars
Loeffler doesn't travel with a ton of guitars, just a few favorites. A Fender Subsonic Strat with Seymour Duncan pickups does most of the heavy lifting. His #2 is a heavily modified Fender Strat featuring two SD humbuckers. Loeffler can't remember the actual models or names of these Duncan pickups, he just digs their sound.

Amps
Loeffler remains a lifelong Boogie man, having played the same rig for his entire professional career. The Chevelle sound ends with a Mesa/Boogie Mark IV plugged into two Mesa/Boogie 4x12 cabs. A second Mark IV functions as a backup.

Effects
Relying primarily on his guitar, amp, and hands to deliver a tight-but-chunky sound, Loeffler has a surprisingly modest pedalboard. His path starts with a Shure UR4S wireless that feeds a Peterson StroboStomp2 tuner and then runs into an Electro-Harmonix Holy Grail Nano Reverb. For extra spice, he switches on a Boss TR-2 or MXR Phase 90. For more gain and grit, he adds a Tech 21 SansAmp GT2, and a Boss GE-7 gives him a nice midrange boost. The last link in the chain is a Dunlop GCB95 Cry Baby wah with a G Lab True Bypass Wah-Pad. A Voodoo Lab Pedal Power 2 Plus provides the juice for all of it.



DEAN BERNARDINI'S GEAR

Basses

Bernardini's custom white Thunderbird-inspired bass is made by Ryan Loux of Loux Custom Instruments. It features Nordstrand pickups and unique fretboard inlays inspired by Picasso. When not playing the Loux, Bernardini pounds one of his highly modified Ibanez BTB basses. Bernardini paints each bass himself, and also crafts a one-off pickguard for each instrument.

Amps

Much like his bandmate, Bernardini plays through Boogie amps. Two Mesa/Boogie Big Block 750 heads drive a pair of Mesa/Boogie PowerHouse 4x12 cabinets. He has painted the latter to give them an ashy, whitewashed patina.

Effects

Bernardini's looks like an unfinished art project. The path starts with a Peterson VSS-C Stomp Classic tuner, and from there an XLR cable runs a clean signal out to the front-of-house mixer. At this point, the signal leaving the 1/4" output gets a bit weird. Bernardini uses a Boss RV-5 reverb and a DD-7 delay to imbue the the Chevelle sound with a spacey, scary ambiance. He then turns up the crunch with a DigiTech Bass Driver and a Tech 21 SansAmp Bass Driver DI. He also uses a Boss GE-7 Equalizer for boost. Bernardini works the amp with his Mesa/Boogie Big Block 750 footswitch. Reportedly, he's crushed many of these Big Block pedals over the years with his heavy stomp.

VINTAGE
FREAK
SHOW

DROWNINGINGUITARS.COM'S FRANK MEYERS got hooked on weird guitars as a kid and never looked back. Here are some of the most bizarre guitars he's come across in more than 30 years of collecting.

BY FRANK MEYERS

The seed for my guitar obsession was planted way back in the mid '80s, when my mom got me an old, used Japanese guitar. Man, I *really* loved that guitar, even though it was tough to play. The intonation was off, and every electrical connection was scratchy and quirky. But it was my first guitar, and just like your first love, there's a lifelong connection there.

That first guitar was a Marvel EJ2, and it was pretty unique. It didn't look like the pointy "super strats" that were so popular at the time. In fact, my Marvel didn't look like any guitar I'd ever seen. I was proud of that slab of wood with the gold-foil pickups!

I was the type of kid who was always interested in things that were different, so my taste in guitars from that point on leaned toward the strange. Whenever I'd visit the local music stores, I'd quickly scan the walls for weird-looking guitars like my Marvel. While my friends bought guitars with neon paint schemes, I was peeking into the back rooms for old guitars with sparkle finishes and four pickups. I loved buying interesting guitars that no one else wanted. And, coming from a humble background, I loved that the prices were right.

I remember walking into a music shop once and becoming infatuated with an old Gretsch White Falcon, but the price was way out of my range. That darn Gretsch was just stunning, with that bold, white paint scheme and plenty of knobs and switches. After a couple of weeks, the shop owner noticed my passion and said, "Hey, if you can't afford that Gretsch, then check out this old Domino."

It was a 1967 Domino Silver Hawk, to be exact—and it was only $100. In my world, the Silver Hawk was just as cool as the White Falcon. And so began my adventure down the proverbial rabbit hole of vintage guitars.

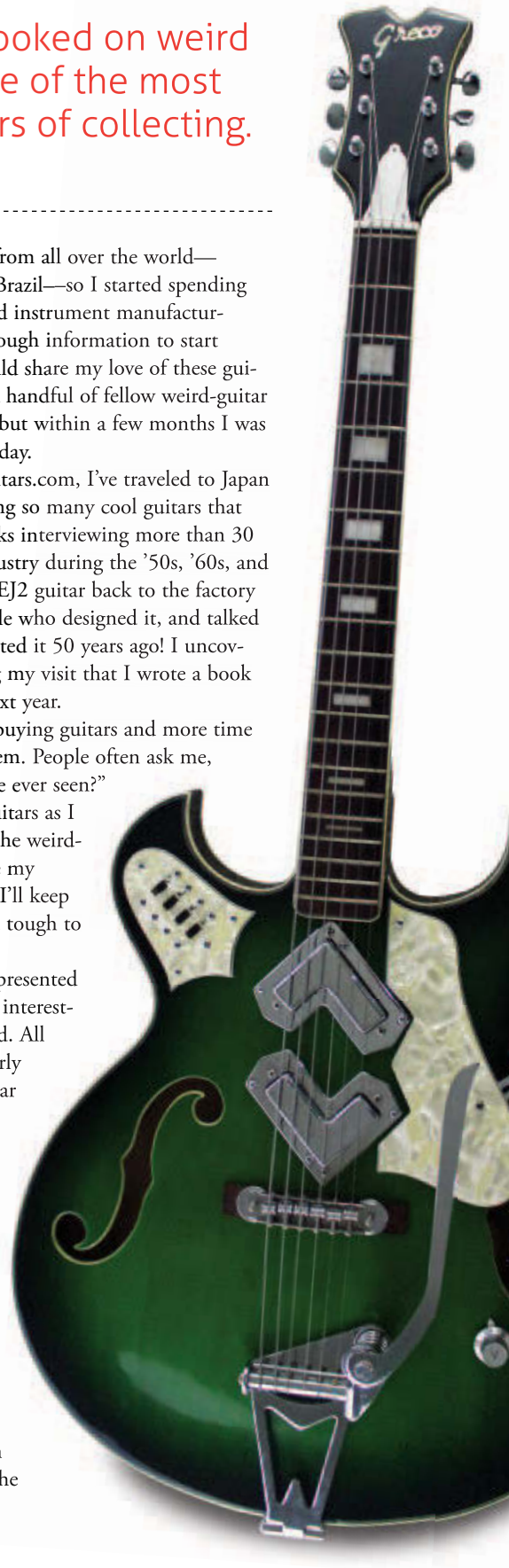
A lot of the garage and punk bands I liked then were using cheap guitars, too. In 1989, when I saw a then-unknown Nirvana in Hoboken, New Jersey, I was amazed to see Kurt Cobain playing an old Univox Hi-Flier. He and Nirvana tore up Maxwell's that night, and it only reinforced my teenage resolve to shun the world of high-priced guitars. I came to view these guitars as a form of outsider art. I lurked in the local pawnshops, eye peeled for 6-stringed oddities. I got good at repairing these forgotten gems, too, which made me appreciate the interesting designs even more.

Twenty-five years later, I'd accumulated a large collection of these strange, beautiful guitars. Something bothered me, though: The total lack of available information about the history of the guitar companies that made these old imports just *gnawed* at me. I had guitars from all over the world—England, Germany, Italy, Japan, Brazil—so I started spending my summers researching these old instrument manufacturers. By 2011, I'd accumulated enough information to start DrowningInGuitars.com so I could share my love of these guitars and their history. I thought a handful of fellow weird-guitar fanatics might share my passion, but within a few months I was getting hundreds of emails every day.

Since starting DrowningInGuitars.com, I've traveled to Japan to uncover the mysteries shrouding so many cool guitars that originated there. I spent two weeks interviewing more than 30 people involved in the guitar industry during the '50s, '60s, and '70s. I even took my old Marvel EJ2 guitar back to the factory where it was made, met the people who designed it, and talked with the very employee who painted it 50 years ago! I uncovered so much information during my visit that I wrote a book on the subject, and it'll be out next year.

These days, I spend less time buying guitars and more time researching and writing about them. People often ask me, "What's the weirdest guitar you've ever seen?" But when you've seen as many guitars as I have, it's tough to say which are the weirdest or most intriguing. I still have my favorites, of course—guitars that I'll keep for a very long time—but it's still tough to answer that question.

However, the 10 instruments presented here offer a good cross-section of interesting guitars from around the world. All were produced in the '60s and early '70s. Perhaps no other era in guitar history saw as many interesting and creative designs—before the "lawsuit" part of the '70s, when many overseas manufacturers focused on mimicking famous U.S. designs. Before the copycat era, more manufacturers seemed to take pride in original designs. Some of them sound great, and some of them merely look great. But all of them deserve some recognition for their contribution to the relatively short history of the electric guitar.



AVALON
AV-2T

This guitar became legendary for its extreme design and cool looks—and for its infamous association with the Shaggs. One could write a lengthy, fascinating history of the Shaggs and the value of their music, but let's focus here on the guitar they made famous.

The AV-2T dates from 1968 and was made by Fuji Gen Gakki Manufacturing Corp. (later renamed Fujigen) in Matsumoto, Japan. Yuichiro Yokouchi founded the company in 1960, and the Fujigen factories make high-end guitars to this day. Fuji Gen Gakki was one of the largest manufacturers of electric guitars during the '60s, and this Avalon model was an original design. At that time, guitar design was primarily left to the engineers, or to the American importers who were looking for a specific style. But this Avalon was actually designed by Mr. Yokouchi. This truly unique guitar was one of only two of his creations to make it to market.

In the late '60s, Fuji Gen had a new factory, and this model exhibited some of the latest techniques made possible by the facility, such as a thin, highly figured maple veneer over a sandwiched body core. The factory employed some of the finest woodworkers in Japan, and this was a guitar made to look sleek and sweeping at a price point American importers would like. With a wholesale price of $47.50, the guitar was described like this: "Professional quality and workmanship go into this ultra slim necked beauty. Newly designed!"

The AV2Ts extreme, sweeping curves were among the last of the adventurous Fujigen designs of the '60s. The neck has a slim, fast feel, and it's a lightweight guitar overall. The low-output pickups have a bit of Strat-like tone, or maybe closer to an old Gibson Melody Maker, but with extra twang. There's an ever-present echo-like quality that lends itself well to surf music. The all-in-one bridge/tremolo, designed at the famous Matsumoku guitar factory in Japan, was quite a popular unit in the late '60s, even finding its way onto the era's Valcos.

Because the '60s guitar boom was in serious decline by 1968, the AV-2T had a very short run. Around 1970, Fuji Gen Gakki pulled out of the export business and focused solely on domestic sales and a partnership with Hoshino Gakki (parent company to Ibanez guitars, Tama drums, and others). This Avalon guitar represents one of the last great Japanese guitar designs.

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EKO
500/4V

Back in the ’90s I ‘d occasionally come across old Italian electrics like this well-worn Eko, shining like crazy neon signs among the “super strats” and SGs on shop walls. Many players considered these throwaway instruments, so you could buy them really cheap as novelties. Otherwise, they’d just sit there, collecting dust for eternity.

Italian imports were flooding the American market in the 1960s. Perhaps the most famous brand was Eko, which was located in Recanati, Italy. American guitarists were offered a huge assortment of Eko models, almost all imported by the Lo Duca Brothers in Milwaukee, Wisconsin.

Eko founder and president Oliviero Pigini ushered in electric guitar production around 1960. Eko electric guitars featured many novel design features, with the bodies and necks often covered in colorful celluloid and sparkle finishes. This Eko is listed in a 1964 catalog as an Eko Model 500/4V. The faux-wood-grained celluloid covering is called “Hazel,” and the back has a dark, burl-like look.

The 500’s pushbutton switching—inspired by accordion designs—offers some interesting pickup combinations. The catalog describes them this way: “M-Full Guitar (all pickups), 1-Jazz (neck), 4-Twang, 1+4-Take Off, 2+3 Full Rhythm, O-Off.” The four patented, alnico 5 single-coils have plenty of clarity and snap. Some Eko enthusiasts note subtle differences between similar-looking pickups on different Eko models, and they often resort to counting the number of tiny metal “blades” in an effort to account for the differences. Which versions are best remains debatable, but my favorite examples tend to sound punchy, with lots of output, almost like a hot Stratocaster pickup. While not designed for dive-bombing, the tremolo is also quite good, with a smooth, rolling action.

Some of Eko’s extreme designs inspired the era’s Japanese makers. American importers, always trying to outsell the competition, often requested close copies of Eko guitars, and soon Eko company had a hard time competing. Eko was nearly squeezed out of the American market, though the company managed to survive the lean late ’60s and continued to make quality guitars in Italy until 1985. Since then, R&D for Eko guitars has been carried out at the Italian headquarters, while the guitars are built in China and Czech Republic.

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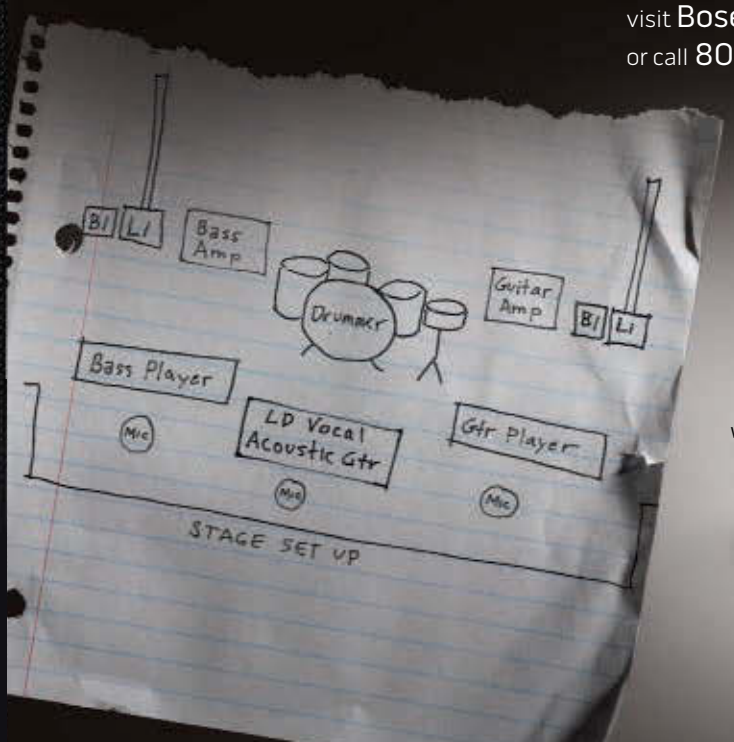

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with B1 bass

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GALANTI
Grand Prix

The electric-guitar craze of the ’60s led many companies to jump into guitar production. In Japan, for instance, factories that had formerly made caskets, shoes, and barrels were suddenly pumping out guitars. In Italy, several accordion manufacturers jumped into the guitar boom with memorable models, but this Galanti Grand Prix is arguably the best of the bunch.

Galanti had been making high-quality accordions since the turn of the century. The company had an excellent reputation and American import partners. R. Galanti and Bro. set up an office in Ridgefield, New Jersey, and during the summer of 1965 ads featuring three totally new Galanti designs—two guitars and a bass—appeared in *Music Trades* magazine.

This three-pickup version was listed as the Grand Prix No. 3003. It’s built very well, though the push-button switches take some getting used to (unless you also happen to be an accordion virtuoso). Grand Prix selling points included its solid wood body, adjustable truss rod, preset tone switches, and patented vibrato unit. The Grand Prix was designed from the ground up, with most parts engineered and produced in house. The pickups are actually mini-humbuckers, and are extremely hot, with an aggressive high end. There are six switching options: O (off), M (all pickups on), each pickup individually, and bridge and neck together. However, only one button can be pushed down at a time.

The year 1965 was the high-water mark for electric-guitar demand, and Galanti’s fortunes mirrored the trend. As demand waned in the late ’60s, these guitars all but disappeared from the marketplace. Nonetheless, Italian designers created some of the coolest, most playable guitars outside of the U.S.

GRECO

950 (aka "the Shrike")

If you grew up playing guitar in the '60s, there's a good chance you started off with a Japanese electric. They were affordable, flashy, and available just about anywhere, including drug stores, department stores, and mail order catalogs. But after a few lessons, many would-be players consigned these guitars to some closet, forgotten to time. I often come across guitars from this era in mint condition. American servicemen stationed in Japan were another source of new-old-stock guitars—they'd send guitars back to the States, only to forget them in the turmoil of returning to civilian life. That's how I found this old Greco in an Arizona storage space.

The neck plate on this beauty is stamped with a "Patent Applied For" number, but the instrument was only available for a year or two, which accounts for its patent application being abandoned. The guitar was known as model number 950, but most people call it as "the Shrike," though that name actually refers to the split-coil pickups. Because of this, two different guitars are referred to as Shrikes, both featuring these bizarre, V-shaped pickups.

Two complete, three-slug coils reside in each V, and you can turn each coil on or off. The pickups have a balanced tone—and some cool options. You can get thin, '70s-funk sounds, mellow jazz tones, or aggressive blues sounds. The tremolo is a passable Bigsby substitute.

This guitar was made at the old Teisco factory in Nagano, Japan. From 1967 to 1969, the factory continued to make guitars, even though the association with Teisco was severed in 1966. The old factory was named Teisco Gen Gakki, and it became very popular with American importers in the late '60s for its competitive prices and high quality. In fact, the first Japanese-licensed Mosrite guitars were produced at the old Teisco factory in the late '60s.

GUYATONE
LG-160T Telstar

The Telstar perhaps best epitomizes extreme Japanese designs of the ’60s. Its name and look are clearly inspired by the sci-fi themes prevalent at the time, as well as the general fascination with space travel, satellites, and such. The guitar was embraced by many Japanese “Group Sounds” rock bands (a style comparable to U.S. garage-rock of the ’60s).

Guyatone guitars were designed and made by the Tokyo Sound Company, which was started by Mitsuo Matsuki, who had been making electric instruments since the 1930s. In the 1950s, Tokyo Sound made Guyatone electric guitars just a 10-minute walk from the original Teisco factory in Tokyo. A somewhat friendly rivalry developed between Teisco and Tokyo Sound, and guitar players in Japan often found themselves in one of two camps, much like U.S. players tended to prefer either Fender or Gibson. Tokyo Sound guitars were often sold in the States under the Kent brand, but more extreme designs like the Telstar were typically reserved for the Japanese market.

Telstars, first introduced in early 1966, were made in small numbers until around 1967. They were considered good instruments for the time. Yamaha (Nippon Gakki) made the wood parts, and Tokyo Sound installed their own pickup and hardware designs at the factory. Electronics include an on/off switch for each pickup and a preset tone switch that accentuates lows or highs. Guyatone pickups usually sound quite good, but Telstar single-coils are some of the best. Despite their appearance, they sound similar to vintage P-90s—much fatter than a Stratocaster.

The necks have a deep shoulder but feel thin in the palm of your hand, much like classic Rickenbacker necks. They’re steel reinforced, but not adjustable. (There were Telstar guitars with adjustable truss rods, but they were typically export-only models.) The “monkey-grip” was intended as a carrying handle, and its position offers optimal balance.

These guitars rarely surface on the used market, so it seems few were made. But the Telstar design found its way onto record covers, which may explain why you could find plastic toy models of it for sale, too. This particular Telstar came from an old warehouse in Japan, where it had been sitting in its case since the late ’60s.

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IMPERIAL
"No Name"

Imagine my astonishment upon seeing this oddball in an Atlantic City pawnshop! This poor old guitar was in sad shape and needed some love. I call it a "no name" because I haven't discovered which Japanese factory produced it. In July of 1965, the Japanese *Music Trades* magazine stated there were 24 known electric-guitar makers in Japan. But there were five more "unknown" makers that no one seems to remember.

The origin of this guitar remains a mystery. There's no record of this model in any catalog I've seen in Japan or the U.S. Several sources state that this guitar was sold under the "Burns" name in Japan, and the "Imperial" name in the States. I was lucky enough to buy another one of these in brownburst, but it had slightly different build characteristics.

When I visited Japan in 2013, I showed pictures of this guitar to everyone I met, including older designers, engineers, company presidents, and factory workers. No one remembered this model, but one electronics engineer seemed to remember the split-coil pickups as the work of a husband-and-wife team who fashioned pickups as a side business in Nagano. Peering under the pickguard, you can see that the pickups were handmade—even the metal covers were cut and tooled by hand. When I study these old parts, I marvel at the resourcefulness of workers who just made things as they went along, despite the lack of industry standardization.

Like the Greco "Shrike," the Imperial's pickups have two three-slug coils under each cover, with on/off switches for each coil. The pickups offer some truly unique sounds. Overall, they sound a bit thin, but they have a nice surf tone and work well with an overdriven tube amp.

I've figured out about 85 percent of the Japanese mystery guitars of the 1960s, but the artist who made this remains unknown—for now.

KLIRA

Haiti De Luxe 544

In 2005 I visited an estate sale in upstate New York with a good friend. I was there mainly to help with heavy lifting, but I found this old guitar, complete with the original case. It had been sitting in a closet for 40 years.

When I got this oldie home, it took me a few months to figure out exactly what I had. Eventually, I stumbled on a little-known guitar maker with a brief span of American imports. Klira, a German company, had had been making musical instruments since the late 1800s. By the 1950s, the factory was located in the Bavarian town of Bubenreuth and was counted as part of a group of good German guitar makers such as Hofner and Framus. During the '60s, some fine German guitars made their way to North American shores, but Klira guitars were scarce.

This Klira dates from 1965 and was called the Haiti De Luxe model 544. There was also a similar, longer-scale model called the Bahama De Luxe. Many Klira electrics from this time have American-sounding model names such as Sioux, Ohio, and Nevada.

Klira models came and went quickly during the mid '60s, and this Haiti was only made for a year or two before disappearing from the catalog. It features a high-gloss "signal red" finish, but the same model was available in a crinkled plastic coating. Many German guitar companies of the period used laminate necks, and the Haiti's is a beautifully thick laminate with a flip-flop striped pattern.

Klira promoted De Luxe models as professional guitars with exclusive features, such as bridge mutes, preset tone controls, and "gilted" (gold-covered) electronics. I'm a bit stumped by the latter claim, but it's clear much thought went into the Haiti's circuit. The pickups are the same Schallers found on many German electrics from the era, and they have a strong midrange presence in many settings. The array of switches and knobs could scare away timid players, but I look at it as hours of fun. There are on/off switches for each pickup, individual volume controls, and separate sliders for a treble circuit that sounds like a Fender Jaguar's electronics on steroids.

TEISCO
T-60

Guitar-playing Glen Campbell fans often wonder what kind of 6-string he played in the early ’60s. Take a look at any old photo or video of Campbell, and you’ll probably spot this unique guitar churning out all sorts of great rockabilly and country licks. The guitar was the short-lived Teisco T-60. The well-loved example shown here was found in a Dallas, pawnshop. Naturally, it had been hanging there for years.

Teisco began in the late 1940s in Tokyo. The company initially focused on guitar pickups and lap steels. In the ’50s, they began producing large hollowbody guitars and small solidbody electrics, but in 1959 the designers pushed hard for the freedom to introduce an original, high-quality design that could hold its own against any other guitar. In 1960, Teisco experienced much growth as demand for electric guitars rose. Just as Teisco moved into a larger factory in Tokyo, they decided that the top-of-the-line T-60 was ready for release.

The T-60 was entirely handmade and very ambitious for its time. It features a fine set-neck design with a deep-V neck profile and solid wood construction. The pickups, designed and produced in house, feature adjustable pole pieces. They measure in the mellow 4kHz range, but sound quite lively The rotary switch permits individual pickup selection, and each pickup offers nice, round tones with a touch of twang—somewhere between a Stratocaster and a Telecaster. Probably the most striking feature of the T-60 is the “monkey-grip” body cutout and the headstock that echoes it. This was the first instance of this signature Teisco feature, and on the T-60 it was carved completely by hand.

T-60s were produced until 1961, but then disappeared. By ’62, Teisco was cranking out electric guitars destined for North American shores. Early Teisco electrics like the T-60 rarely made it to the U.S., and the guitars that did arrive here usually came home with American servicemen stationed in Japan. It makes you wonder how Campbell found his T-60, huh? But after he moved to Los Angeles in 1960, he was soon showing off his skills on one of the finest early Japanese electrics.

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WURLITZER
Cougar

For most guitarists, the Wurlitzer name stirs up memories of cool electric pianos or the old organ in your grandparents' sitting room. But for about a year in the mid 1960s, the company produced an interesting line of electric guitars. Back in the '80s, I found the guitar shown in the same small-town piano store where it originally sold in the '60s. The whole shop was a time capsule from that bygone era—so much so that I initially thought the guitar was brand new.

It dates to 1966 and is called the Cougar model 2512 (the 2512 denotes the sunburst color). Cougars were also available in "Taffy White" and "Lollipop Red." There were two other Wurlitzer models (the Wildcat and the Gemini) and the entire lineup was referred to as "The Wild Ones!" These wild things were made in Neodesha, Kansas, at the Holman-Woodell factory, which made guitars from 1965 until around 1968. This factory produced some cool guitars, including the bizarre LaBaye 2x4 models made (somewhat) famous by Devo's Bob Mothersbaugh.

The well-made pickups and tremolo were Holman-Woodell exclusives, produced in house. The Sensi-Tones single-coils sound good, but suffer a bit from a complex wiring scheme with many capacitors buried under the pickguard. The tones are definitely 1960s, albeit a little thin-sounding. Cougars were wired for stereo—they are among the first stereo guitars—so there is a fader knob as well as a 3-way pickup selector. The little rocker switches are preset tone controls that seem to aim for rock or jazz settings. These were ambitious guitars, both in design and function, with some nice components and unique designs. Unfortunately, they never sold well and were out of production after about a year.

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YAMAHA
SG-80T

A few times a year, I go on guitar adventures, visiting guitar shops, antique stores, and flea markets in search of forgotten treasures. In 2007 I found this old Yamaha in a tiny Maryland music shop. There was exactly one other used guitar there. I thought I knew all there was to know about Yamaha electrics, but I'd never seen this model before. When I left, their used-guitar inventory was down to one.

The Nippon Gakki Company—aka Yamaha—jumped into electric-guitar production around 1966. Its earliest 6-string designs were slightly edgy and bizarre—swooping, asymmetrical shapes, lots of knobs and switches, and a generally futuristic aesthetic. In the next decade, Yamaha guitars became a little tamer, but they remained ambitious.

The SG-80T was the flagship of the 1972 lineup. It features a German body carve, a slim neck with chevron inlays, a newly designed tremolo, and rather complex electronics, including a bypassable, five-position rotary "tone selector" knob. The SG-80T actually has three pickups—the bridge unit is two single-coils that can be used individually or in parallel. Combining them with the model's then-new "tone boost" knob yields some strong sounds. The bridge pickup gets most of its tonal options from the tone selector knob, which sometimes seems to restrain tones, though there are some very usable options. If you're into weird old guitars, this might be one of your desert-island instruments because of the sheer range of its tones.

These forward-thinking design features come at a price, though: The SG-80T weighs in at a robust 9 pounds! Typically for the '70s, it came in either a natural finish or a dark mahogany. The all-mahogany construction of this particular guitar provides plenty of sustain. From what I can gather, this model and ones like it were only made for about a year. In 1974 Yamaha redesigned the SG line to the more symmetrical styling made popular by then-endorser Carlos Santana, and used today by artists such as John Frusciante.

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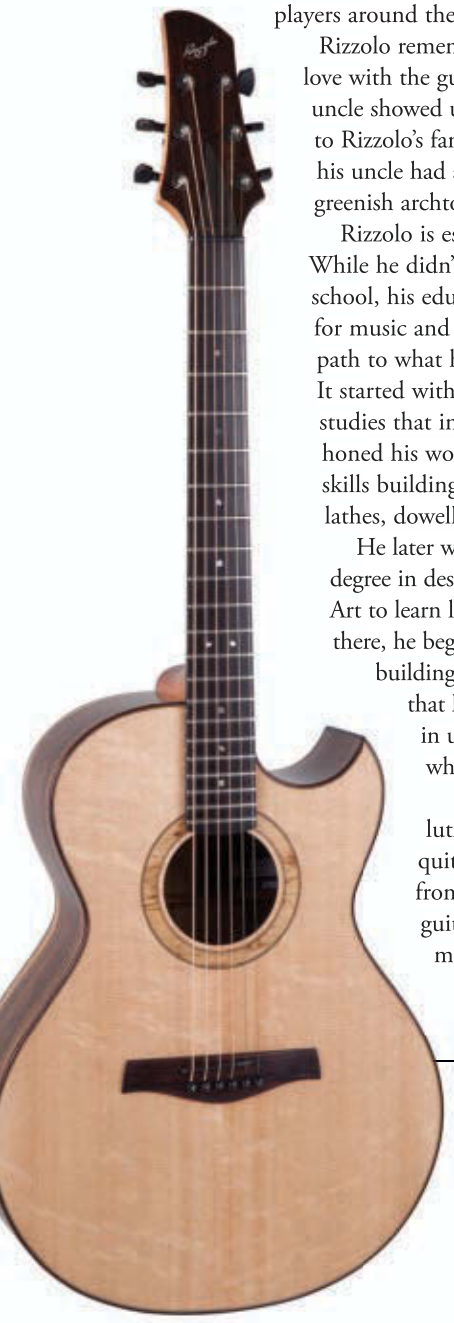
Rizzolo Guitars

BY RICH OSWEILER

For some, hearing mention of the Australian island state of Tasmania evokes thoughts of the home of a particular *Looney Tunes* character—not necessarily a place to find a guitar builder producing a wide range of high-end instruments. But Tasmania *does* offer just that. For more than 30 years, luthier Gary Rizzolo has been handcrafting instruments out of his shop for players around the globe.



Rizzolo remembers the exact day he fell in love with the guitar. He was just 10 when his uncle showed up on his regular Sunday visit to Rizzolo's family, but on this particular day, his uncle had an "amazing looking, shiny greenish archtop" in tow. Rizzolo was hooked.

Rizzolo is essentially a self-taught luthier. While he didn't attend a formal lutherie school, his education—coupled with a love for music and guitar—led him down the path to what he so passionately does today. It started with his 3-year diploma of teaching studies that included crafts training where he honed his woodworking and metalworking skills building furniture, cabinets, wood lathes, dowelling tables, and, yes, a guitar.

He later went on to pursue a fine arts degree in design at the Tasmanian School of Art to learn line and form. During his time there, he began amassing books on guitar building and ran a guitar-repair business that he feels helped him immensely in understanding "what worked, what was good, and what wasn't."

Unlike many in the boutique-luthier category, Rizzolo builds quite a wide range of instruments, from flattops to archtops to electric guitars and basses. "Once a builder masters the fretted instrument, it's just a matter of re-jigging to build any other type of guitar," says Rizzolo. He became known early in his career for 7-string classical guitars that eventually developed into his 7-string archtop, and then electrics that are close to his heart because of his days in a rock band. But he contends he's still most passionate about acoustic instruments. With that, "Because I build guitars on commission, I make whatever the customer requires."

"Once a builder masters the fretted instrument, it's just a matter of re-jigging to build any other type of guitar." —Gary Rizzolo

Rizzolo likes working with highly figured varieties of timber, in particular rosewoods and maples. Local Tasmanian blackwood remains his favorite, even though its dust has been declared a carcinogen, but the luthier says he's more than willing to mask up and work with it. "It looks a lot like koa and has a sound like mahogany with a bit more midrange. It has a wonderful fiddleback grain, but it *is* getting harder to find and more expensive as global demand increases."

"I work alone and quite like the 'one-man, one-guitar' ideal," says Rizzolo. "I work on an instrument from the initial full-size drawings to the final polish and then into the case to maintain the highest quality control." Along with attention towards fine fretwork and shaping of the necks for superb playability, "extracting a full-rounded sound of bass and treble with a rich tone from thin pieces of solid timber is the art I enjoy the most in guitar making."

rizzologuitars.com

PRICING & AVAILABILITY

Rizzolo's shop is located in the Tasmanian capital city of Hobart where he builds approximately seven instruments year entirely by hand. "I am slow and methodical," says the luthier. His turnaround time is six months or less. He for the most part only builds on commission (which means all sales are direct), but he continues to experiment with models like his recent leaf-hole ukulele with Kasha bracing. Rizzolo's guitars range in price from approximately $3,750 to $6,500 for his electric guitars and basses, and $5,600 to $11,200 for acoustics and archtops.

15" SJ Acoustic

The SJ is Rizzolo's latest design but it's actually based on an old neck and headstock template he made in the '80s. The back and sides are cut from American walnut, the top is "bearclaw" Sitka spruce, and the Florentine-cutaway body is braced with both spruce and mahogany. Rizzolo also went with mahogany for the neck that's topped with an ebony fretboard, and he used East Indian rosewood for the bridge, headstock, and binding. In describing the tone of the SJ, Rizzolo says it has a "deep bass, strong mid, and sweet treble."

Custom Special

Rizzolo built the Custom Special for a customer that had a stack of some spectacular bird's-eye-figured Huon pine for the top and headstock face. The luthier says he rarely uses the wood because it's very oily and heavy, but combined with a Tasmanian blackwood back and maple veneer in-between, the tone "ended up being quite excellent." Appointments include a Wilkinson/Gotoh VS100 bridge with a Tremol-No device, and Sperzel Trim-Lok tuning machines. For electronics, Rizzolo packed the Custom Special with a DiMarzio Humbucker from Hell in the bridge and a pair of handwound True Vintage single-coils from Van Zandt Pickups in the middle and neck positions.

BR Fretless RB IV

Rizzolo has offerings for the low-enders too, and this 34"-scale fretless beauty is a fine example of what he can do with four strings. Carved from a walnut and blackwood combo, the body is topped with highly figured Tasmanian fiddleback blackwood. The neck is constructed from the same walnut and blackwood combo and capped with an ebony fretboard that is subtly adorned with mother-of-pearl inlay work. For electronics, this thumper is packed with a pair of Kent Armstrong soapbars, as well as a Graph Tech Ghost piezo system in the Hipshot bridge.

15" Leafhole Archtop

For anyone who appreciates fine woodworking with subtle elegance, Rizzolo's 7-string Leafhole archtop guitar is certain to please. The luthier made good use of Tasmanian fiddleback blackwood by carving the neck, back, and sides from his favorite timber, as well as using it for the veneer on the front and rear of the headstock. The body top is European spruce and Rizzolo used ebony for the mother-of-pearl inlaid fretboard, bridge and tailpiece, and the truss-rod cover. For electronics, the Leafhole is equipped with a Kent Armstrong custom humbucker that's managed by the onboard Fishman Prefix Pro preamp.

My Blackmore-Inspired Frankenstrat

BY WILL RAY

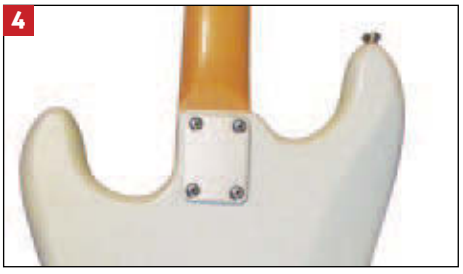
A while back I was searching eBay for Epiphone guitars when I spotted this oddity, which appeared to be an Epiphone neck bolted to a two-pickup Strat-style body (**Photo 1**). The seller posted pictures of a few small cracks in the body where the neck was attached (**Photo 2**). I emailed him asking how stable the neck was with those cracks, and he assured me that the guitar played fine and he never had trouble keeping it in tune.

Even so, I wasn't quite ready to place a bid, but he kept reducing the price until it got ridiculously low. At that point I pulled the trigger and won it for $55 plus $25 shipping. The guitar reminded me of an early Ritchie Blackmore signature model Strat that Fender offered years ago, which came stock with only two pickups. In Deep Purple's heyday, Blackmore relied on his Strat's neck and bridge pickups for almost all his concerts and recordings, and his early signature model Strat reflected that preference. There aren't as many pickup combinations in this configuration, but you can't dispute its simplicity. Today, most Fender Blackmore Strats come standard with three pickups.

I wasn't sure what to expect when it arrived, and I was pleasantly surprised to find a really nice playing Strat-style guitar. The neck feels really good and sports jumbo frets, which make it a little Gibson-ish (**Photo 3**). Like a Fender, it has a 25.5" scale and—amazingly—the intonation is spot on. The fretboard position markers are reminiscent of a Rickenbacker, which appeals to me. The red painted headstock doesn't match the white body, but who cares? Clearly this was a project guitar and I could tell it was a labor of love for the builder.

What originally attracted me was how this guitar looked in the photos. The pickup covers and pickguard have aged nicely over the years. I'm not sure where the body came from, but it seems to work well with this neck. With its 4-bolt plate (**Photo 4**), the neck seems securely seated and provides good sustain. The small cracks at the neck joint are simply the result of sloppy workmanship by the original builder, who was trying to force the neck into a tight pocket.

Clearly this was a project guitar and I could tell it was a labor of love for the builder.



Bottom Feeder Tip #288: Sometimes you have to take a chance on a guitar, especially if the price is right and it has a flaw. Remember, the buyer has most of the power on eBay. Make sure the buying price is low enough that you could sell it later and not lose money. This guitar falls into that category.

So how does it sound? The pickups' output is a tad weak, but they actually sound very cool. Typically, weak pickups have a weenie tone, but as you'll hear in the audio example, these possess a sort of saturated Strat twang. The guitar has a nice bluesy tone, but is equally at home on country or rock. There's no pickup selector switch, so you have to turn the pickups on and off by manipulating their dedicated volume controls. But there is a benefit: This setup lets you adjust the pickups' relative levels—something you can't do on a standard Strat. So is it a keeper? Yeah, for a while anyway ... you know how that goes.

WILL RAY *is a founding member of the Hellecasters guitar-twang trio. He also does guitar clinics promoting his namesake G&L signature model 6-string, and produces artists and bands at his studio in Asheville, North Carolina. You can contact Will on Facebook and at willray.biz.*

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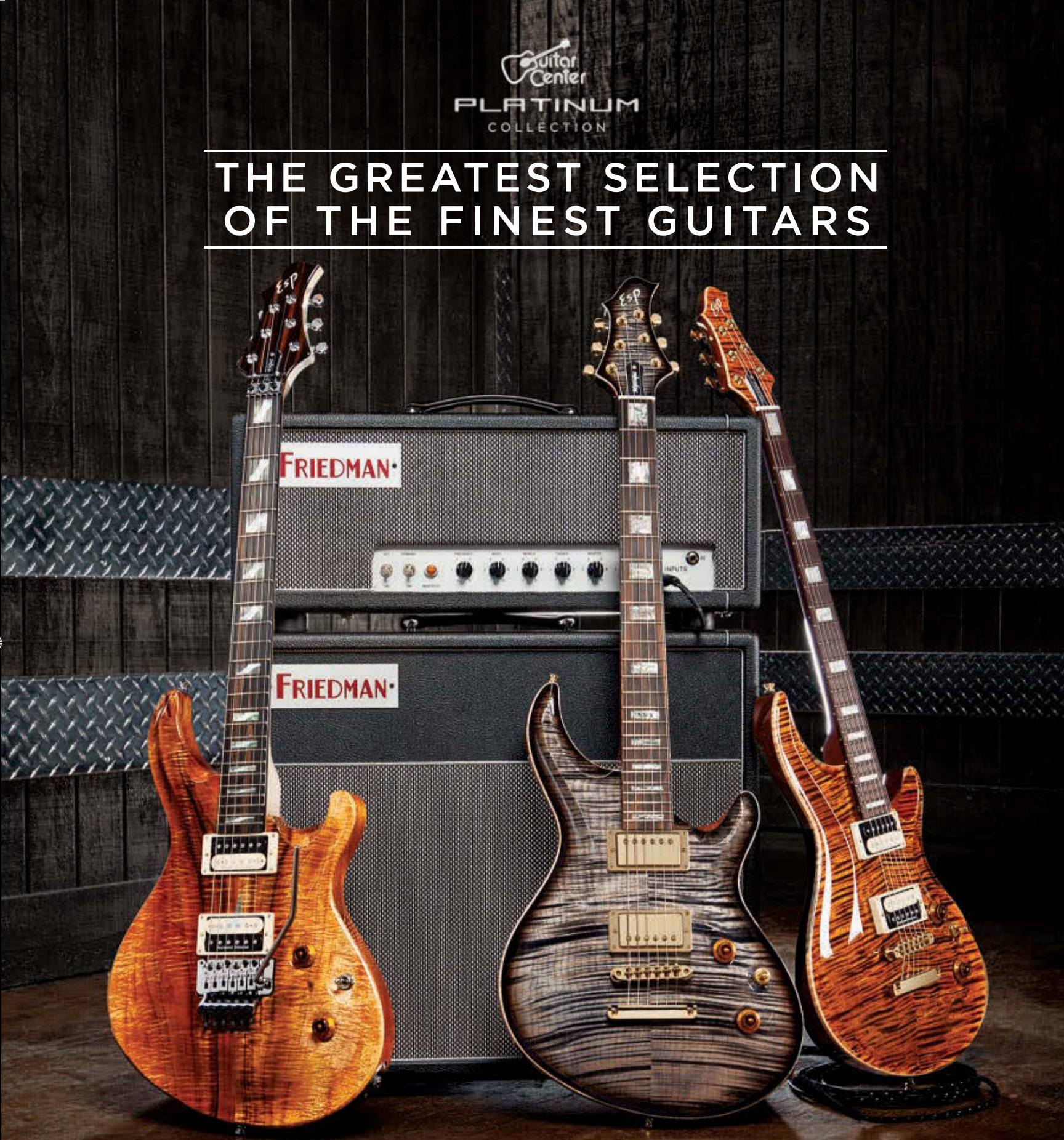

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Gibson
Gibson

1959 Gibson ES-225 TDN

BY DAVE ROGERS, LAUN BRAITHWAITE, AND TIM MULLALLY

In 1955 Gibson developed a line of thin-bodied electric guitars to appeal to players wanting a smaller, more comfortable instrument, but without the weight of a solidbody guitar. This line consisted of three guitars: the upscale Byrdland, the mid-priced ES-350T, and the economy ES-225T.

The ES-225 TDN looked much like a plainer ES-175, but measured only 1 3/4" deep (compared to the ES-175's 3 3/8" depth). When it debuted in the summer of 1955, it had only a single pickup midway between the neck and the bridge. By the summer of 1956, successful sales drove Gibson to introduce a natural finish option and a two-pickup version. The 1959 Gibson catalog states: "The ES-225T series of thin-bodied, cutaway guitars offer outstanding professional instruments in the popular priced field. Combining the rigidity and tone features of a solid body guitar with the light weight, easy-to-hold shape of conventional styling, these instruments are available in single or double pickup models."

The 1959 ES-225 TDN pictured has all the features typical of that model: 24 3/4" scale, maple-laminate construction (top, back, and sides), single-ply binding (top, back, and neck), mahogany neck, 20-fret rosewood fretboard, and two P-90 single-coils. The strings are held in place by an original Les Paul-style combination bridge/tailpiece.

The March 1959 list price was $244.50. The current value for one in excellent, all-original condition is $3,500.

The amp behind the guitar is 1961 GA-20T Ranger. The tweed-covered amp has a power rating of 16 watts and is equipped with tremolo and a Jensen 12-inch speaker. The 1961 list price was $207.50. The current value for the amp is $1,000.

Sources for this article include: *Gibson Electrics: The Classic Years* by A.R. Duchossoir, and *Gibson Amplifiers 1933-2008: 75 Years of the Gold Tone* by Wallace Marx, Jr.

Original price: 1959 ES-225 TDN, 244.50; 1961 GA-20T Ranger, $207.50
Current estimated market value: 1959 ES-225 TDN, $3,500; 1961 GA-20T Ranger, $1,000

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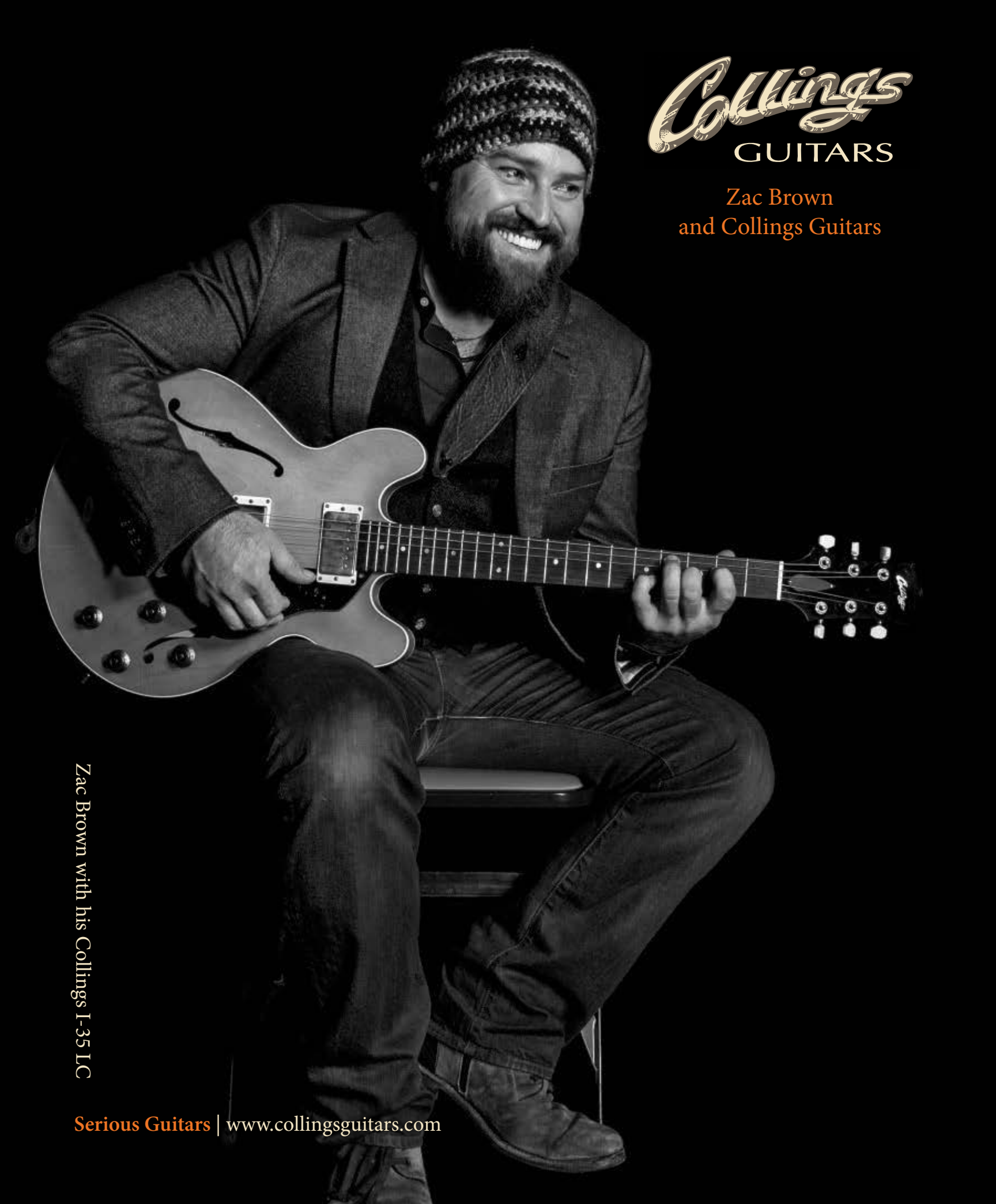
Photos by Mullally and text by Braithwaite.

Opposite page: This economical 1959 Gibson ES-225 TDN sits against a 16-watt 1961 GA-20T Ranger.

Far left: The ES-225 debuted in 1955 with only a single pickup between the neck and the bridge. Gibson introduced a natural finish and a two-pickup version in 1956.

Left: The strings of this thin-bodied cutaway are held in place by an original Les Paul-style combination bridge/tailpiece.



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MASTERY BRIDGES

Leo Fender didn't get everything *right the first time: How* ***John Woodland*** *perfected the offset guitar bridge.*

BY PETER GOLDENTHAL

Leo Fender designed the Jazzmaster in 1958, and for 50 years musicians fell in love with its elegant shape and unique sound—and fell *out* of love with its temperamental and fickle bridge. A luthier and designer named John Woodland put in a lot of time thinking about this problem—and a lot of time trying to fix those challenging bridges. In 2008 he had a flash of brilliance. The result of that flash was the Mastery Bridge.

The Mastery Bridge seems to be everywhere now. It's on new and vintage instruments played by Nels Cline, Bill Frisell, Elvis Costello, Sean Lennon, Troy Van Leeuwen, Thurston Moore, Lee Ranaldo, and many others, and on boutique guitars from BilT, Fano, and others. "Before John," says BilT's Tim Thelen of BilT, "the best anybody could do was to use a modified Mustang bridge. If there was no Mastery Bridge, there would be no BilT guitars."

I met John, a recognized expert on the history of the American guitar, when I was researching an article about the pre-war Martin D-45 ["Pre-War Perfection," June 2014]. There was so much historical material to cover then that we didn't have time to talk about the accomplishment for which he is so well known among Jazzmaster and Jaguar players. But several months ago, between designing and prototyping the new Mastery Vibrato, John spoke with *PG* about Mastery Bridge and his life in music and lutherie.

NELS CLINE ON JOHN WOODLAND

"I was breaking things all the time on my 'Watt' guitar. Mastery Bridge saved my life. Another luthier—a very good one—had advised me to retire the guitar. The rosewood on the fretboard was so worn that it was scalloped in places, and he said that one more refret would be its last. John had asked me to send it to him, but I kept putting it off because I was nervous about shipping it. When I finally did send it, John said, 'This guitar has plenty of refrets left—go play it.' [Woodland used rosewood dust to fill the hollows in the fretboard.] John is the best. He can make everything perfect. He knows about these guitars, loves them, and has respect for me and my music." —*Nels Cline*

Nels Cline (Wilco, the Nels Cline Singers) installed a Mastery Bridge on his most precious guitar: a 1960 Jazzmaster purchased from bassist Mike Watt and nicknamed "Watt."

How did it all start?

I'd been running the repair shop at Willie's Guitars in Saint Paul for 10 years, and had been working on the guitars of some very well known musicians who used Jazzmaster and Jaguar guitars. I did all the known mods to get the bridges to work, but when the guitars came back from tours, the tweaks were failing and the guitars were falling apart. I was frustrated by that and sick of maintaining the classic bridges—I wanted something bulletproof. One day I had a moment of clarity and quickly drew out a design for a two-saddle adjustable bridge with four intonation screws and posts that fit snugly in the diameter of the existing thimbles.

I'd known Jeff Tweedy a long time, but I didn't know [fellow Wilco guitarist] Nels Cline. One day Nels came in and we connected. I had a prototype of my new bridge design sitting on the bench. The saddles weren't even plated—they were plain brass. I took his Jazzmaster to the bench and leveled and crowned the frets, did some other adjustments, and put my bridge on. He was playing at the Dakota Jazz Club in Saint Paul with the Nels Cline Singers that night. I watched them play, biting my nails the whole time. At the end of the show Nels said, "I'd like to thank John Woodland, because what he did for my guitar today is incredible."

Was that his famous '59 Jazzmaster?

It was a different vintage guitar he was using for that tour. Nels has around 15 Jazzmasters, I think. The famous "Watt" guitar [Cline purchased it from bassist Mike Watt] is actually a 1960 Jazzmaster, but so many people think it's a '59 that it just keeps getting referred to that way. Back then Nels and I were just getting to know each other, so I didn't work on Watt right away. After he'd been using the Mastery Bridge for a while, Nels told Sonic Youth about the bridge, and they started trying them too. I was experimenting with different materials and going through a product development stage for about eight months. At some point Nels turned Bill Frisell on to them. After that, Nels came to me and said, "You have to make this available to people." Until then, I had no plans to market the bridge. I just wanted a better solution for my own clients. Nels was the first professional musician to use it, though.

It sounds like you completely redesigned the classic Jazzmaster bridge.

There's a difference between redesign and design. I think most people try to improve on existing designs by taking prior art and making it the best it can

Photo by Zoran Orlic

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S2 Custom 22

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PRS PAUL REED SMITH GUITARS

> **“When I do a design, I want as few parts on the guitar as possible, and I want those few parts to do a lot of things. I look for a simple and meaningful solution.”**

possibly be: That’s redesign. Design is different. It involves looking at a problem in an entirely new way, and Mastery Bridge is just that. When I do a design, I want as few parts on the guitar as possible, and I want those few parts to do a lot of things. I look for a simple and meaningful solution. For instance, our four saddle-height adjustment screws do what other bridges use 12 screws for. For five decades, those bridges have frustrated Jaguar and Jazzmaster players—it was not a new issue at all. The classic design was based on the idea that a rocking bridge would be an advantage, but it caused more problems for most players. I didn’t want the bridge to rock. The design had to work on all offset guitars without drilling or modifying the guitar’s body. After a lot of experimenting, I got prototypes to where I liked them enough to send them on tour with Wilco and Sonic Youth. They beat the hell out of them, but it worked—the guitars came back stable, like how I left them. A high school friend put up a website, but we didn’t run any ads at all. It just exploded. We couldn’t keep up with the demand.

Mastery Bridges have unusual chrome plating. It looks great, but is it more than cosmetic?

I chose a hard chrome plating that is usually used only in industries that require extremely hard plated surfaces, like aircraft landing gear and piston linings. When a player uses the vibrato a lot, the movement of the strings causes friction, and the resulting heat makes the guitar go out of tune. The very hard plating on our saddles is self-lubricating and helps to guide the string over the saddle without generating a lot of friction and heat.

You said that one day you had an inspiration and drew the design for the Mastery Bridge in a few minutes. What kind of previous experiences enabled you to do that?

My mother, grandfather, uncles, and cousins all played country music from

the ’40s and early ’50s— Roy Acuff to early Carl Smith stuff. My grandmother played organ. My grandfather played mandolin and banjo. He played behind his back, like a vaudeville artist. So my first exposure to music was in my own family. I got my first guitar when I was 4. I took lessons when I was 5. When I was 13 or so, I started taking more serious interest in music. I had a Lotus Les Paul copy, and later my cousin, who was playing with Badfinger, gave me a nice handmade tele. One day the only other kid in my high school who played guitar was at my house, and he took the whole guitar apart when I wasn’t looking. I think he thought it would be good for me to learn about it—some kind of Zen thing. Anyway, I was forced to figure out how to put it back together again and I did. That probably started my interest in working on instruments.

After high school I went to lutherie school in Red Wing, Minnesota, and after that I worked for Roger Benedict for four years in Minneapolis. We built a lot of guitars together. He used to say, “Perfection is in your own eyes. It’s your idea of what the guitar should be like and look like,” and he emphasized the importance of doing all the steps necessary to achieve that level of perfection. After Roger died, I worked as the tech for Soul Asylum for a couple of years, which was essentially just adult day care, so I didn’t care for it much. I left and started the repair department at Willie’s. I actually drew out the initial Mastery Bridge design there, and my coworkers were the first to see it. The working name was “Bridget,” so after about six months of us all calling it Bridget I walked into the store one day and said, “I have a new name: Mastery Bridge.” They hated it, so I figured it would work.

How did you get interested in the history of the American guitar?

My mother was a nurse, and she ran a home for elderly people. The old people would talk with me about their lives and experiences, and then they would die. It was like the people were gone, and their stories were gone too. It seemed their legacy was somehow lost on me as a 12 year old, not to be heard again. I think that’s the core reason I obsessively sought out everything I could find about Paul Bigsby and John Deichman, and why I wanted people to know about what they did for the guitar community. Bigsby was hugely important. Everybody knows about the Bigsby Vibrato, but many people don’t know he was the first to do the six-in-line Kluson tuner. Bigsby took the bass side of two sets of the then-new, closed-back tuners and ground down the mounting side so each screw would hold two sets of tuners. Had he not done that and used the whole tuner, it would have changed the top angle of the headstock. That’s an example of a very small innovation that affected so much of the guitar world. Fender obviously took

Opposite page: (Top) The Mastery M1-V kit solves the tuning and stability problems associated with classic Jazzmasters and Jaguars.

(Bottom) Mastery’s vibrato is stronger and more stable than vintage units.

Right: Luthier John Woodland had the opportunity to examine the iconic instrument Paul Bigsby created for Merle Travis in 1946 while contributing to Andy Babiuk's book *The Story of Paul A. Bigsby: The Father of the Modern Electric Solidbody.*

this—and never credited him. Spec'ing out the Merle Travis Bigsby and doing all the tracings was one of the most exciting things I've ever done, guitar-wise. It's the first modern electric guitar. When we were working on the Bigsby book [Andy Babiuk's *The Story of Paul A. Bigsby: The Father of the Modern Electric Solidbody*], I insisted on going to the Country Music Hall of Fame to go over it. It took some work to set that up—the glass case alone is so massive that it took four people just to open it up.

What about your interest in the history of the dreadnought?

I got interested because it was the most influential acoustic guitar design in the world, and no one really knew of its origin. Dick Boak [of Martin Guitars] told me that there were a bunch of papers locked in the attic of North Street Martin building. I climbed up there and found thousands and thousands of documents that had not been opened since the 1920s and '30s. It was unbelievable! I was pulling months-long chains of letters from people like Jimmie Rodgers that no one had seen since they were written. Each document I found led to 10 more questions, and eventually to the story of John Deichman, the man who actually drafted the dreadnought. My focus started with Martin and with the guitar itself, and then it became more about Deichman the man. Lots of people want to know about the bracing patterns, truss rods, and top thicknesses of these guitars.

Bill Frisell with his current main guitar: a JW Black tele with a Bigsby Vibrato and a Mastery Bridge

BILL FRISELL ON MASTERY BRIDGES

"I learned to play on a Fender Jaguar, so I have a soft spot for those guitars, but they are notoriously difficult to get to where things aren't falling apart. The original bridge design had so many little moving parts, little screws, and little Allen screws, right where the bridge is transferring energy to the body of the guitar, and the bridge balances on just two posts. There were so many places things could rattle and fall off, and the strings could slide off the side of the bridge. It was so temperamental! So when Nels Cline showed me the Mastery Bridge on his Jazzmaster, that totally took care of the whole deal, and in such a simple way. The fewer saddles you have, the more tension you get transferred to the body. The design has only two saddles, and they're uniquely adjustable. When Woody [John Woodland] designed a bridge that works with a Bigsby Vibrato, Jay Black [of JW Black Guitars] got excited and built me a tele custom with Woody's bridge and a Bigsby. That's basically the only guitar I've been playing lately." ***—Bill Frisell***

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John Woodland inspects John Lennon's 1962 Martin D-28, the guitar Lennon used all throughout the 1970s and on his last live performance.

I'd spent my whole life repairing and building instruments—that part wasn't as interesting to me. For me, the way to understand the guitars was to understand the people who made them. How they looked to things. Their work ethic. Their perspectives on life. All that research also taught me that I needed to leave my own stamp in the community, another reason Mastery Bridge probably happened.

What projects are you involved in now?

The Mastery Vibrato was just released. I worked on the design for a year, and when we released it we thought we had enough stock for two months, but it sold out in one day. My goal is to grow Mastery Bridge slowly and to keep it manageable. I like to be hands-on, so I don't want it to be a huge operation. Right now we're looking at a somewhat bigger space so we can do more things. I'm also working on another part of the guitar. It'll probably take over a year to get it where I like it, but I think it's going to be amazing. I might build a few guitars in my garage, but for now Mastery Bridge is my focus. I feel a responsibility to do what I can to improve the guitar and to help guitar players progress. That's why I designed the FSC Jeff Tweedy OO Martin Guitar. I thought it was important to show that a guitar can be built of sustainable woods and still sound and look great. I'm working on a project with Sean Lennon and Martin Guitars right now. It's going to be the most important artist model guitar that I'll ever design. It's going to be amazing!

Photo by Zoran Orlic

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DRIVING MUSIC FOR THE AMERICAN DREAMSCAPE

Gear fiend ***Adam Granduciel of the War on Drugs*** *talks about classic song structures and how ethereal sonics guided the creation of Lost in the Dream.*

BY ADAM PERLMUTTER

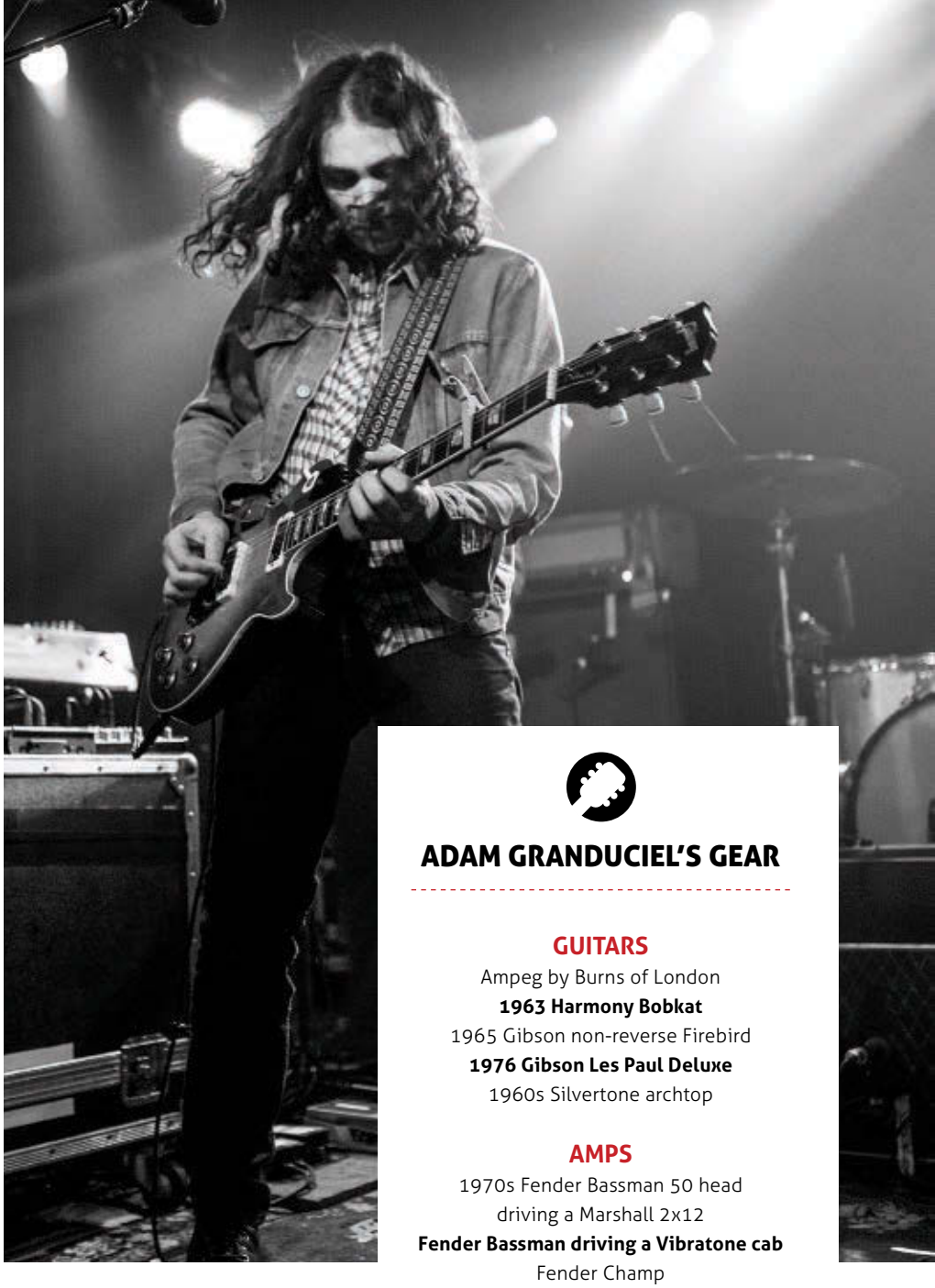
Back in 2012, Adam Granduciel—who writes songs under the name the War on Drugs—hunkered down in his Philadelphia home studio to begin work on a new album. Though Granduciel was still spinning from the touring merry-go-round on the heels of 2011's critically lauded *Slave Ambient* LP, the new songs—at least in skeletal form—came easily.

But the long break from the road also gave Granduciel time to second-guess his work, and the second-guessing begat anxiety over how to bring the new songs to life. After months in this intense, exhausting, and often emotionally fraught creative cycle, the singer-songwriter and multi-instrumentalist emerged with *Lost in the Dream*, a simultaneously dusty and atmospheric album that, ultimately, found Granduciel restoring many songs to their simplest architecture and fleshing them out with the help of his bandmates—Dave Hartley (bass and guitar), Robbie Bennett (keyboards), and Pat Berkery and Charlie Hall (drums).

Lost in the Dream book-ends a decade of road work, studio solitude, and sonic alchemy for the War on Drugs. The band started in 2003, when Granduciel and fellow Philadelphia songwriter/guitarist Kurt Vile started writing and playing together. Supported by a rotating cast of musicians, the band made a name playing in Philadelphia clubs and in nearby New York City. A full-length debut, *Wagonwheel Blues*, came in 2008—the same year Vile stepped out to work as a solo artist. But the band's breakthrough came with 2011's *Slave Ambient*, an LP where Granduciel's synthesis of heartland and space rock beautifully coalesced into a signature sound.

Adam Granduciel's equal love for songs and studio atmospherics leads critics to liken the band's work to Tom Petty shot through a shoegaze filter, but that doesn't adequately describe Granduciel's aesthetic. He has a deep respect for and a canonical understanding of American music, as well as an intense curiosity about song arrangement, effects pedals, analog recording gear, and the possibilities of studios large and small. He connects these dots in his own way, creating evocative soundscapes within deceptively simple structures that conjure vivid short films for the ear.

We recently spoke to Granduciel about his guitar and recording gear, the process behind his music, and his special tour souvenirs.



Adam Granduciel plays his 1976 Gibson Les Paul Deluxe at Portland's Wonder Ballroom earlier this year. He still has his first guitar—a 1963 Harmony Bobkat that he's had rewired.

Let's start off talking a bit about your formative musical experiences.

When I was in sixth or seventh grade, I had this friend named Jeff. His dad was a "blues lawyer" who played guitar on the weekends and made his son learn drums so he'd have someone to jam with. I went over to his house and got *such* a taste for the guitar. But it took months for me to convince my parents to buy me an electric. When they finally relented, they wanted to try to find something cheap. Luckily, I got the coolest guitar I'd ever seen—a 1963 Harmony Bobkat—for $89. This was in 1991, and I still have that guitar, although I've had it rewired.

In any case, soon Jeff and I had a band. We'd play every weekend. By the time I got to high school I was jamming with kids after school. We did a lot of pop-rock covers—we learned all of the songs off of R.E.M.'s *Monster*, which was sweet because that's when I first got to use a tremolo pedal. At the same time, I got into exploring the extended sounds that a guitar can produce, like how to make controlled feedback. I was mystified by the Sonic Youth records, with all their weird sounds. But as I experimented on the guitar, I figured out how to create my own nonstandard effects.

You're a big Bob Dylan fan. Is there a particular era of his career that inspired you most?

Over the years it's definitely changed. When I was in my early 20s, I was super into Dylan's mid-'60s stuff, like *Highway 61 Revisited* and *Blonde on Blonde*. I loved Mike Bloomfield's approach. Later, when I was going through my first lovesick-breakup thing, I got into *Blood on the Tracks*. The last couple of years, I've been listening a lot to *Time Out of Mind* and *Oh Mercy*, along with the whole Rolling Thunder [Revue] period. Rolling Thunder seemed like a different kind of thing, a huge band with a bunch of friends just jamming—and a weird combination of musicians at that, like Joan Baez and Mick Ronson.

Has Bloomfield's playing influenced yours?

I just admire his style. He always just went for it. He wasn't the fastest player and was by no means a virtuoso. He just played a few notes here and there, with a ton of emotion. And I love his sound. He was one of the first players to put a humbucker in a Tele to get this gritty but beautiful tone. There's something so raw about it, too. A lot of the recordings captured the first or maybe second time he had played a song. It's often so clear that he's kind of feeling his way through a tune, but he's doing his own thing and really laying in with such great timing and conviction.

ADAM GRANDUCIEL'S GEAR

GUITARS

Ampeg by Burns of London
1963 Harmony Bobkat
1965 Gibson non-reverse Firebird
1976 Gibson Les Paul Deluxe
1960s Silvertone archtop

AMPS

1970s Fender Bassman 50 head driving a Marshall 2x12
Fender Bassman driving a Vibratone cab
Fender Champ
Marshall 2046 Specialist
Vox AC30

EFFECTS

Electro-Harmonix Stereo Memory Man
Electro-Harmonix Stereo Pulsar
Fender Vibratone
Ibanez ES-2 Echo Shifter
Moogerfooger tremolo
Two MXR Flangers
Wren and Cuff Phat Phuk

STRINGS & PICKS

Dunlop strings (.010 and .011 sets)
Dunlop Tortex 1 mm picks

Photo by Colin McLaughlin

You, Kurt Vile, and a few other Philadelphia musicians have worked together in modular ways—kind of mixing and matching with each other. How do you think that's affected each other's music?
When Kurt and I met, we were both heavily into working independently, with our little digital 8-tracks, obsessing over the music in solitude. It was great to meet a partner in crime, always pushing, complimenting, and critiquing me—and to have a person instead of a machine to play music with. Now it's fun to go on tour with Kurt in the Violators, to dig in while taking a backseat role. And we've really developed kind of a shared approach to the guitar.

How would you describe this approach?
Some people work on pre-composed parts or riffs, but both Kurt and I approach the guitar with a lot of freedom to do what we want within the chord structures. It's been cool to hear how this idea has worked its way onto each other's albums—not just in the guitar parts, but in other instruments and in the overall production.

What can you tell us about the approach as it pertains to guitar?
It's having a bag of tricks—not only little licks, but different tones that come from effects pedals—and using those to play from the soul. It's about interplay, too. When I play with Kurt, we often echo little ideas—like a hint of melodic variation on a basic D chord—and this helps us navigate the maze of sound created by the effects pedals. Again, there's so much freedom in having no real parts.

The War on Drugs is both a solo and an ensemble project. How does that work?
It's not a 100 percent democratic process. Instead, I kind of direct the players. It's like, "Robbie, I know you can play a great piano part in this section." One reason that the band works so well together is that we're all great friends—everyone truly loves the songs and is completely invested in them. Together, we work to make something big and beautiful.

What's your creative process like and how has it evolved over the years?
Back in the day, I just sat down with an acoustic guitar and a pad of paper. I would have 90 percent of a song done before going into the studio and recording it with a band. Now, a lot happens in my home studio. I might start with a drum machine and a couple of guitar chords, then get lost in my playing and record it. Two months later, it's the groundwork for a song. After that, the song further evolves—I'll hear little melodies popping in and out and do more and more guitar takes.

How do you know when a song is complete?
It just feels done, not just on its own but in the context of a record. I tend to work on everything together. I never have a

The War on Drugs' music relies less on set guitar parts, says mastermind Adam Granduciel. He approaches guitar playing with sonic effects, interplay, and expression at the forefront.

song mixed and completed months before the rest of the songs on an album. When everything starts to feel connected, that's when my work is through.

You've been labeled a perfectionist. Do you agree with that characterization?

For the most part, I'm not trying to perfect anything. I'm pretty good about taking care of tiny details, but also knowing when to step away and leave things alone. If we mix a song at 1 a.m., whatever magic is in the air at that hour is on the song. It wouldn't really work to go back a few days later and edit it—especially working half-analog and half-digital, like I do. There might be a part where, for example, the bass could've been a little louder, but I'll decide to just let it be.

What's your home studio like?

I've got a nice, 1", 16-track tape machine and a 24-channel board. I just bought an API Lunchbox [modular studio processor], and I've got two really nice preamps, one really nice compressor, a few pieces of rack gear, and—most important—all of my amps, guitars, pedals, drum machines, and keyboards. So it's mostly instruments and less recording-gear-centric. It's all about how I can get the best sounds out of these old pieces without really overthinking things. I got into using preamps just to make sure that, when I record something at home, it's usable in a professional studio. I don't want an engineer to be, like, "This sounds like a really inspired part, but we can't use it because you're clipping your shitty preamp." The tape machine is sweet, too, because it adds another possibility for experimentation. I can slow things up or speed them down to create a really interesting bed for a song. I haven't really found a comfort level in using Pro Tools for song development yet. Plus, I really enjoy the whole process of cleaning the machine's heads and putting the tapes on in preparation for recording.

You're known to be a real gear aficionado—talk about your guitars.

I've got a '76 Les Paul Deluxe that I love. It's really light—lighter even than a Telecaster, and I don't know exactly why. I do know that it plays really nice and sounds so good with those mini humbuckers. I bought it in 2012 when I quit smoking while on tour for *Slave Ambient*, since I figured I'd be saving money by not buying cigarettes.

The first nice guitar I ever bought was when I was on tour with Thurston Moore, in the summer of 2011. I was at Old Town Music, in Portland, when I saw a '65 non-reverse Firebird. It wasn't museum-quality—the body was sanded, it was stained dark, and it had Lollar P-90s. At one point, someone decided to put banjo tuners on the guitar and enlarged three of the holes on the headstock, but then decided against it and filled the holes back in. But I loved the guitar so I bought it.

Right now I'm really into the Les Paul and use the Firebird as a backup. But I'd love to find a second Deluxe for a backup, so that I can use the Firebird more as its own thing. I'd also love to find a sweet Jazzmaster, maybe a Japanese-made one from the '90s, that I can put replacement pickups into and really have fun with. I borrowed one from a friend and used it all over the record, but I've never found another that I both like and can afford. I'm getting a Mexican Tele from a friend. It's got really nice hardware—Seymour Duncan pickups and a Bigsby. It'll be fun to have and add a new flavor to my music.

I've also got a really cool Ampeg by Burns of London guitar. You can see it on the back cover of the new album. It kind of looks like a Strat, and it's got a really cool sound—very bright and Telecaster-like. I also have a few random acoustics, like an old Silvertone archtop that I recently got at a shop when I was on tour—like Neil Young used to do. It's so cool to pick up these kinds of souvenirs on the road, because then they're associated with good memories of this time and the people I've made music with. And I'd much rather have a 1960s Silvertone that I found for $200 than a new pedal that anyone can buy.

What about pedals?

First in my chain is a custom fuzz—it's silicon-based, with two knobs that I turn all the way up. I just struck up a relationship with Wren and Cuff to make

Photo by Colin McLaughlin

me a knockoff Big Muff that will go after my volume pedal as a second fuzz, to take things a notch louder. I've got a couple of MXR Flangers, the old ones, and a HardWire RV-7 stereo reverb. I love analog tape delays, but for live use I don't need analog. A little digital delay with the mix low and the feedback high works well for getting trails and letting the notes fly around a little. Plus, unlike an old unit, the HardWire is so durable.

I've got an old Electro-Harmonix Stereo Memory Man, too. I mostly use this just as a chorus pedal. The two different outs go to different pedals and different amps, so it sounds less chorus-y, like the Cure, but really wide. The Memory Man is pretty fragile, and it worries me to take it on the road, but it turns my whole sound into this whole other thing: darker, more distorted, and just awesome. I also have a Moogerfooger tremolo pedal, a Wren and Cuff Phat Phuk germanium boost, and at the end of the chain, an Ibanez Echo Shifter if I want to create washes.

I have a ton of other stuff too—older gear I don't use on tour—but I don't know if the older pedals can hold up on the road. Their input jacks might go out, and their power gets weird. Plus, I want to keep my rig reasonably sized for flying and playing in Europe. On the other hand, traveling in America is a little easier, so maybe I'll be able to bring along things like my old Electro-Harmonix Stereo Pulsar, this awesome tremolo pedal.

And amps?

I have a 1994 Vox AC30 and a '70s Fender Bassman 50 head that runs into a Marshall 2x12 cab. The Marshall started life as a 50-watt JMP combo. I found it for $500, which would have been a great deal, but then I saw that the amplifier had been ripped out and it was just an open-back cabinet. But it sounds so great with the Bassman. I used a Leslie speaker a lot on the record, but I didn't want to go down the wormhole of taking it on the road, so I just bought a Fender Vibratone from Main Drag Music in Brooklyn. I use this with a second Bassman and its own cabinet, kicking the Vibratone into a fast setting whenever it's appropriate.

I also like collecting smaller amps. While we were in Portland on the last tour, I found a Marshall Specialist from the early '70s, which has reverb and the deepest, best-sounding tremolo. It's a 25-watter that was probably built to compete with the Fender Princeton. I brought the Specialist on tour and used it on the last couple of shows, but I don't travel with it now, as I fear it just might blow up. I read online that Marshall stopped making these amps because they were a fire hazard. I have a late-'60s Traynor 25-watt with one 12" speaker and great tremolo and reverb. And I've got a couple old Fender Champs, too. I'm just collecting stuff as I tour. There won't always be a time in my life when I can buy an amp without thinking too much about it and just toss it in the trailer.

The Business of Music, Circa 2014

BY PETER THORN

The documentary *Artifact* provides an excellent glimpse at the often-harsh realities of making it in the modern music business.

The music business was a *completely* different animal when I started playing professionally. I moved to Los Angeles in 1990 with dreams of joining or forming a great band, writing songs, scoring a record deal, and touring the world. I was really just hoping I could at least make a good living doing what I love. As it turns out, I've been able to do exactly that, but the road has been full of twists and turns, and the way I make my living is much different than I'd anticipated. So in this month's column, I'm going to talk about earning a living as a professional guitarist in the 21st century.

The "record business" as we knew it 20 years ago has basically ceased to exist, which has changed the career trajectories of many professional musicians. Plenty of people who were in the business because it was once potentially lucrative have left and are now selling insurance, real estate, or something else altogether. If you are in the music biz in 2014, you are most likely doing it because you love music more than money.

It's been a long time since I was in a band trying to become the next big thing. I don't even really know what starting as a young band and trying to "make it" looks like anymore. I *do* know that most signed bands these days probably have some form of a 360 deal, where the label shares in all your revenue, including merchandise, live gigs, etc.

I recently watched the movie *Artifact*, which chronicles the seemingly endless struggles between Jared Leto's band Thirty Seconds to Mars and their label. I thought back to all the things I've done to try and make it: the label showcases, playing for guys in suits with their arms folded and trying to impress them, working day and night in the studio to make something great, and touring all over creation in a van—only to have the label pull your tour support after a few months because someone in a boardroom decided it was the right business decision. I spent my twenties and a good chunk of my thirties on that roller-coaster ride. I've been a member of *five* bands with major-label record deals—none of which you've probably even heard of. Five was enough, but I wasn't about to quit the biz. I love playing music too much.

I've been an independent contractor for the last 15 years or so, and I love being able to do my own thing. I can tour as a sideman with different artists. I can write, record, and release music, and promote it myself. I can do video lessons and sell them through sites like jamtrackcentral.com or on my own website. Producing video gear demos for manufacturers has also become a big part of what I do. Understanding and harnessing the power of the internet and computers, and focusing on goals are key. If you can do this and truly have something to offer, you can have a career in music in 2014 like the following two guitarists who are making the music business work for *them*.

U.K.-based guitarist Rick Graham is a monster on guitar who can shred with the best of them. He has impeccable technique, but is also a really good instructor who has come up with some terrific video lessons so us mere mortals can try to absorb some of his otherworldly guitar skills.

Rick offers free lessons on his YouTube page to generate interest and build his brand. In turn, the free lessons drive traffic to Rick's streamlined website, where he's made it easy to purchase downloadable video lessons from his extensive selection. Rick's lessons are fun and informative, and are available for purchase 24/7 to anyone on earth with a computer. He earns money when he's awake—and when he's asleep!

Justin Sandercoe is another U.K.-based guitarist. Justin started a website in 2003 offering sample video guitar lessons to help promote his private one-on-one lessons. When Justin started posting instructional guitar videos to YouTube in 2006, things really took off. He became a YouTube partner in 2008, allowing him to monetize his videos with advertisements—a potentially significant

source of income. His two YouTube channels, JustinGuitar and JustinGuitar Songs, now have a combined subscriber base of over 585,000 people.

Beyond his instructional videos, Justin is active as a performer, writer, and producer with artists such as Katie Melua and the rock/folk group We Came As Strangers. Just imagine releasing a new single on the internet and being able to promote it on a YouTube channel with the number of subscribers Justin has. If you wanted that kind of power and reach 15 years ago, it definitely meant signing with a major label.

Both guys are great examples of forward-thinking guitarists who have used their talent, ingenuity, modern technology, and the internet to forge career paths that would have been unthinkable when I first started playing professionally. Are there any innovative ideas can you think of to set yourself apart and create a successful music career in 2014?

PETER THORN
is an L.A.-based guitarist, currently touring with Melissa Etheridge. His solo album, Guitar Nerd, *is available through iTunes and cdbaby.com. Read more about his career at peterthorn.com.*

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You Can't Always Get What You Want

BY LARRY FISHMAN

In my past few columns, I've traced some of the historical approaches to amplifying acoustic instruments. I've also gone over the design philosophy behind some of the more common approaches, with a deeper look at the technical details of several currently available pickup designs. At this point, I think it might be useful to step back and consider what this is really all about.

Why do we *want* to amplify an acoustic instrument in the first place? After all, these instruments already are amplifiers on their own. Their original design intent was to mechanically amplify and enhance the sound generated by a tensioned string when plucked, bowed, or hammered-on so that that resulting sound could be heard at a reasonable volume in an intimate setting.

The comments and conversations surrounding acoustic amplification range from the sublime to the ridiculous.

You're in luck if that's all you want to do with an acoustic guitar. Simply pick out an instrument that responds comfortably to your touch and is pleasing to your ear, invite some friends over to your house, and make some music! This is one of the rare cases where your wants and needs are in almost perfect alignment. You *want* this particular instrument because of its aesthetics, feel, and pleasing sound, and it's already loud enough on its own to fulfill the *need* to be comfortably heard in an intimate setting.

The trouble starts when we need an acoustic instrument to perform in an environment that requires it to produce much a higher SPL (sound pressure level) than it was originally designed to produce. Be it a local bar with the band in the corner, a sports stadium, or a converted warehouse, these gigging situations obviously require more than what's needed for the back porch or an acoustically pristine concert hall—the same need that spurred the invention of the electric guitar.

With the development of new sensors, electrical amplifying systems, and digital signal processors, we've fortunately seen some major advancements over the past 30 years in the pursuit of enhancing the SPL potential of acoustic instruments. Today's acoustic guitars can hold their own volume-wise, in *any* venue. But I caution you: Once we ask an acoustic instrument to perform at these "unnatural volumes," the wants and needs equation becomes much more complicated.

In my work, be it at my place of business, a customer's guitar factory, a concert venue, a night club, a music store, a recording session, a social gathering, or crawling through countless web forums on acoustic amplification, I listen to or directly talk to hundreds (if not thousands) of acoustic instrumentalists each year. The comments and conversations surrounding acoustic amplification range from the sublime to the ridiculous. There is little general consensus regarding the best amplification approach, but there are *always* steadfast advocates with regard to the benefits of one piece of gear verses another. I do, however, find a common thread in many of these discussions that poses a real dilemma.

For a typical example that illustrates my point, a local singer-songwriter was visiting our facility a few months ago. She was there to have a meeting with our artist-relations guy and discuss amplification gear for a new guitar she had just purchased.

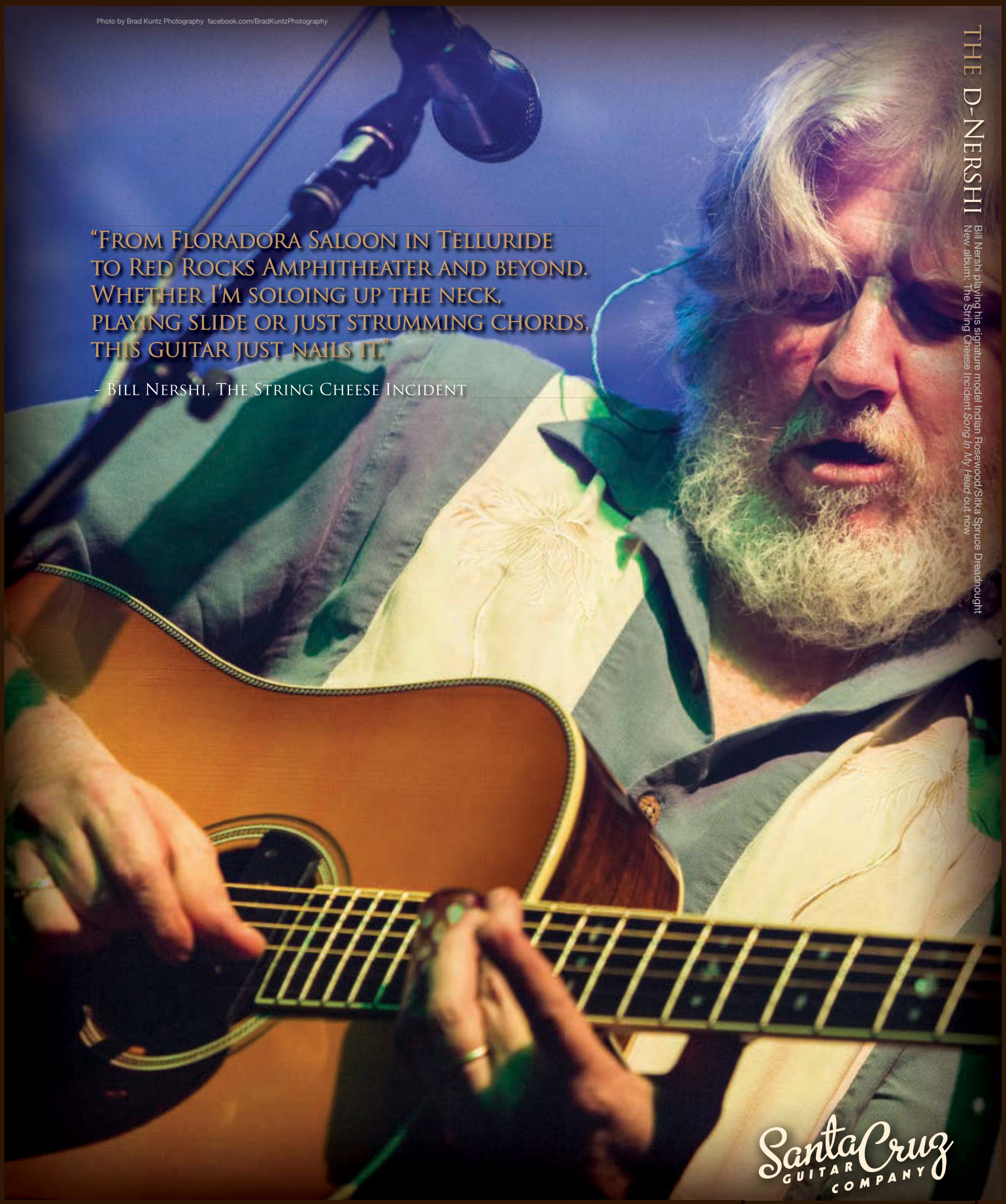
After I was introduced to her and we spent some time talking about what was going on with her career, I asked her what type of gear she had in mind. She told me that she really loved the sound

of her new guitar and wanted something that would give her more volume onstage, but would still "sound *just* like my guitar, only louder." I told her the only way I could help was to recommend a set of heavier-gauge strings. That wasn't what she was expecting to hear. When I continued that I was afraid I couldn't get her what she wanted—and neither could anyone else—she didn't say anything and looked at me like I had three heads.

Herein lies the rub: There is *no* way to raise the volume of an acoustic instrument by using electronics to make it louder onstage and project better into a room, yet still produce a sound "just like my guitar, only louder." There is no pickup, microphone, amplifier, or loudspeaker combination that can accomplish this, no matter how well designed, sophisticated, or expensive they might be. The real issue is based on the way our ears and brain sense and interpret sound.

Over the course of my next few columns, I'll discuss some techniques and examples that should shed some light on this subject. We'll then investigate if what you think you want is actually what you need to get the job done. Until then!

LARRY FISHMAN *is president and founder of Fishman Transducers, which he began in his garage in 1981. In the early '90s, he also co-founded and managed Parker Guitars (which was later sold to U.S. Music Corp.) with his friend Ken Parker.*



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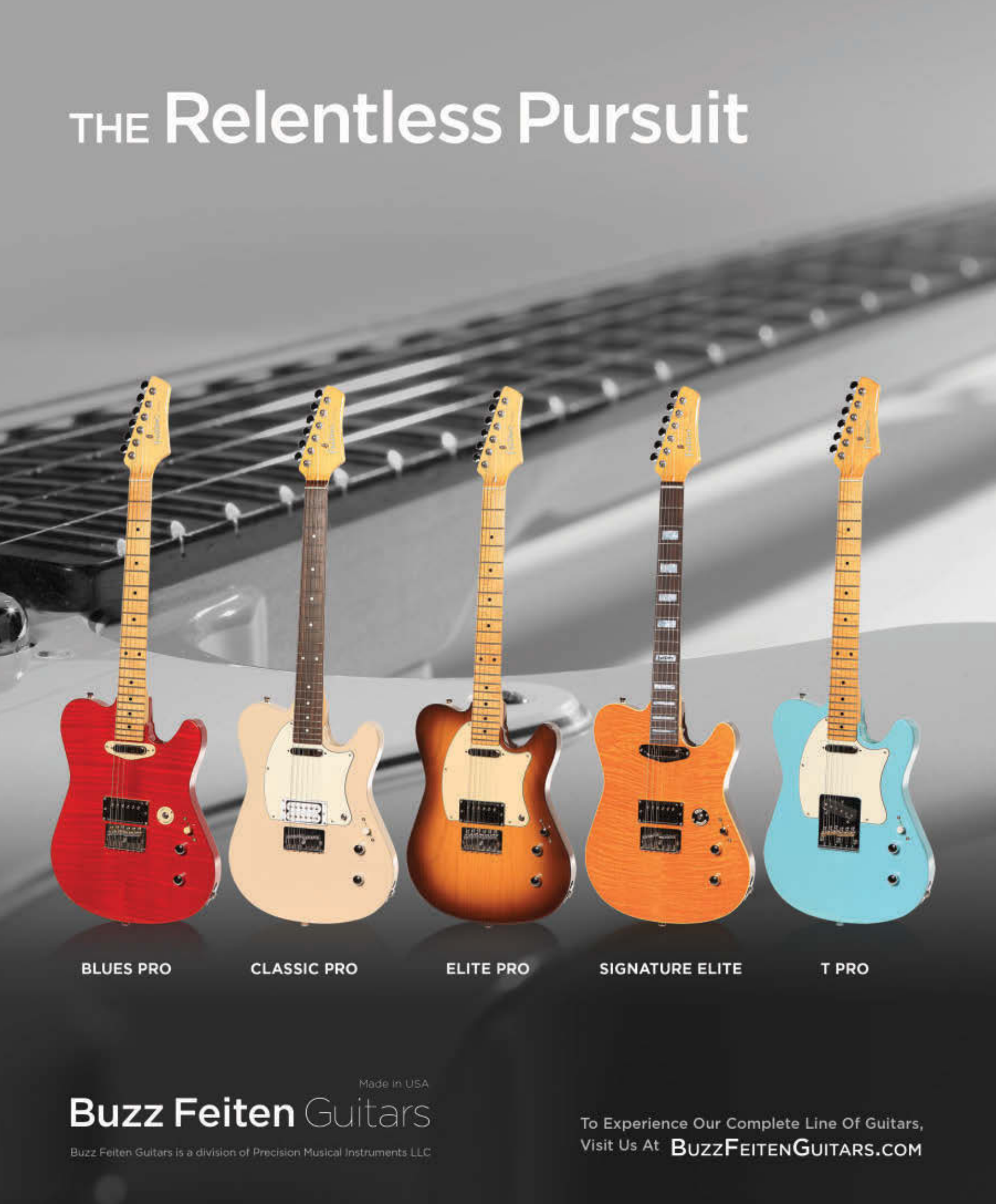

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CRUISING TO THE EDGE

Yes hosts a five-day, progressive-rock sea adventure in the Caribbean.

BY TESSA JEFFERS

The 11-minute opus that closes Yes' 1971 album, *Fragile*, begins with an urgency and chaos of frenetically blended guitar and bass notes that lead into a gentle coo of rolling, rhythmic waves.

With a flick of a wrist, maestro Chris Squire breaks the soft groove with his unusual lead bass guitar, punctuating everything with intensely building lines and a haunting melodic immediacy. The two musical ideas furiously dance until suddenly the former dangerous vibe becomes infectious, and the unpredictable mystique and intrigue of the climb peaks. It's as if the song is trying to tempt a listener to come along—make the voyage.

"Heart of the Sunrise," is an appropriate soundtrack to set sail with on Cruise to the Edge, a progressive-rock themed tour of the Caribbean that travels from Miami to Honduras and Cozumel, and back again, in five days. It first set sail in 2013, making its second run in early April this year.

Yes, the band that started it all, are gracious hosts. The spectacle includes mood-setting touches both subtle (like the iconic psychedelic artwork of Roger Dean, which made its way from projector screens to fest-goers T-shirts, to the art gallery at the ship's top deck) and over-the-top (wizard-themed nights encouraging cruisers to wear capes around the deck).

More than 2,000 guests sailed with about 25 bands, so it appears prog-rock is alive and well. Yes is releasing *Heaven & Earth* on July 8, with the lineup of guitarist Steve Howe, bassist Chris Squire, drummer Alan White, and Geoff Downes on keys and programming. It's the group's 21st studio album, and the first with new vocalist Jon Davison. The plethora of friends they brought along for this boat ride—Marillion, UK, Queensrÿche, Saga, and Italian proggers Premiata Forneria Marconi (PFM), to name a few—are enjoying similar late-career renaissances.

"I don't think I've met anyone who hasn't said they were happy," said guitarist Steve Hackett, reflecting the general sentiments of the prog-rock passengers. "Besides perhaps those who've fallen over and been horribly injured," he joked, referring to an apparent mishap on the first Cruise to the Edge in 2013. "Mind yourself on those corridors, the stairs, and the wet patches."

Yes plays in the Pantheon Theatre aboard Cruise to the Edge in April 2014. This venue spot was for the flagship shows, which included two big shows per headliner with assigned seating.

Photo by Robert Juckett

Left: Marillion's Steve Hogarth brought his rare and beloved Rickenbacker 360 on Cruise to the Edge.

Right: Moon Safari's Johan Westerlund plays a 1981 Gibson Victory Artist bass with 24 frets and a unique-shaped pickguard.

Lay of the Land

For those who've never been on a cruise before (like this writer), the majestic MSC Divina is quite an introduction. Boasting multiple decks, fine-dining restaurants, and even a spa, the European MSC line's newest ship is like a luxurious ocean-going village. Pair the 24-hour all-you-can-eat buffet with an all-you-can-hear menu of various sub-genres of symphonic rock, and what you get is a prog-enthusiast's dream vacation.

As the ship glided away from the Port of Miami, guests settled into what would be their home at sea for the next five days. Sporting black Cruise to the Edge T-shirts for the blackout-themed disembarkation party, the fans gathered to hear Saga kick off the music festivities on the Pool Stage. The central and highest performance area on the ship, the Pool Stage featured two-tiered concert seating, lawn chairs, hot tubs, and plenty of island-style booze concoctions.

Pair the 24-hour all-you-can-eat buffet with an all-you-can-hear menu of various sub-genres of symphonic rock, and what you get is a prog-enthusiast's dream vacation.

The music went from sun up to, well, almost sun up. A typical morning might include breakfast at the Manitou buffet, followed by some sunning or a dip in the pool while the first performers welcomed you into the day.

Inside the ship, there were a half dozen stages and more things to see than there was time to see them. The Atrium stage provided a nice focal point in the middle of all the activity, and bands had the opportunity to play a variety of shows: a larger concert, an intermediate lounge show, and a stripped-down acoustic or Q&A/meet-and-greet event in a setting reminiscent of *Inside the Actor's Studio*.

The classy Black and White Lounge—one of the midsize venues—would be right at home in a 5-star hotel in Vegas. Outfitted in state-of-the-art furniture,

ONBOARD GEMS

There was no shortage of intriguing instruments aboard the MSC Divina on Cruise to the Edge, so in the spirit of celebrating aspects of offbeat musicianship, here's a look at a few eccentric tone toys used on deck.

BLUE BOY: Marillion guitarist Steve Hogarth showed off his Rickenbacker 360 with a Blue Boy finish. The 6-string was originally made as part of a limited run of 40 for the U.K. market in 2002. In 2004, Rickenbacker issued the Blue Boy in the U.S.

TOUCHY STUFF: Let's be honest, the Stick Men's touch instruments are a little mysterious. Tony Levin is well known for playing a Chapman Stick, but most people don't know that it's a stereo instrument that combines both a bass and a guitar on one fretboard—five or six strings devoted to each on opposite sides. "It's a touch style, so you don't pluck it, you just thump it with all your fingers on each hand," Levin says. "Which means you can play a lot of notes."

For Tony's standard electric bass rig, he says doesn't need an amplifier. "I'm going direct into the house. If there's an amp onstage it's just for me. I like the sound of the bass and if I didn't, I'd be looking for another bass." The Stick, however, is a little more complex. He runs the bass strings through a compressor directly to the front-of-house, and processes the guitar side with a pedalboard of effects.

Stick Men guitarist Markus Reuter also plays Chapman Stick, but he currently uses his own brand of touch-style instruments that he co-designed with luthier Ed Reynolds. Reuter has two models of Touch Guitars, the U8 and U10. He tunes the middle six strings to the New Standard Tuning (NST) developed by Robert Fripp for his Guitar Craft workshops. "My tuning is mostly in fifths," Reuter says. "It starts in a low Bb and the top is a minor third and major second."

SPACE BASS: Swedish bassist Johan Westerlund of Moon Safari plays something of interest to fans of rare Gibsons. His futuristic, antique fireburst 1981 Gibson Victory Artist bass has 24 frets, two active pickups, Moog electronics, and an unusually shaped pickguard. "It was supposed to be like a Y, which is kind of weird, but it was inspired by Yes," says Westerlund. "I like the sound. It's really thundering—it's like a Precision bass, but with some strange electronics from the '80s."

Left: Photo by Robert Juckett **Right:** Photo by Klaus Bornemann

it was a favorite among cruisers for its quaint ambiance. For those who might have had their fill of odd time signatures, other vices were at the ready. One could gamble in the casino, shop in the ship mall, puff it up in the cigar lounge, exercise in the well-equipped gym, or gorge in the fine-dining experience at the Black Crab (with bands like Yes and Genesis playing on the overhead speakers at any given time). And for two days, guests could take excursions like scuba diving or explore the Cozumel port at will. (The Honduras stop was cancelled due to storms this year, but most of the music lovers didn't notice.)

Storytellers

Fans of Steve Hackett enjoyed a rare intimate performance, which he began with a classical guitar composition before launching into his signature "Horizons." Flawlessly picking his Alvarez Yairi cutaway nylon-string, he closed it out with another Genesis classic, "Blood on the Rooftops."

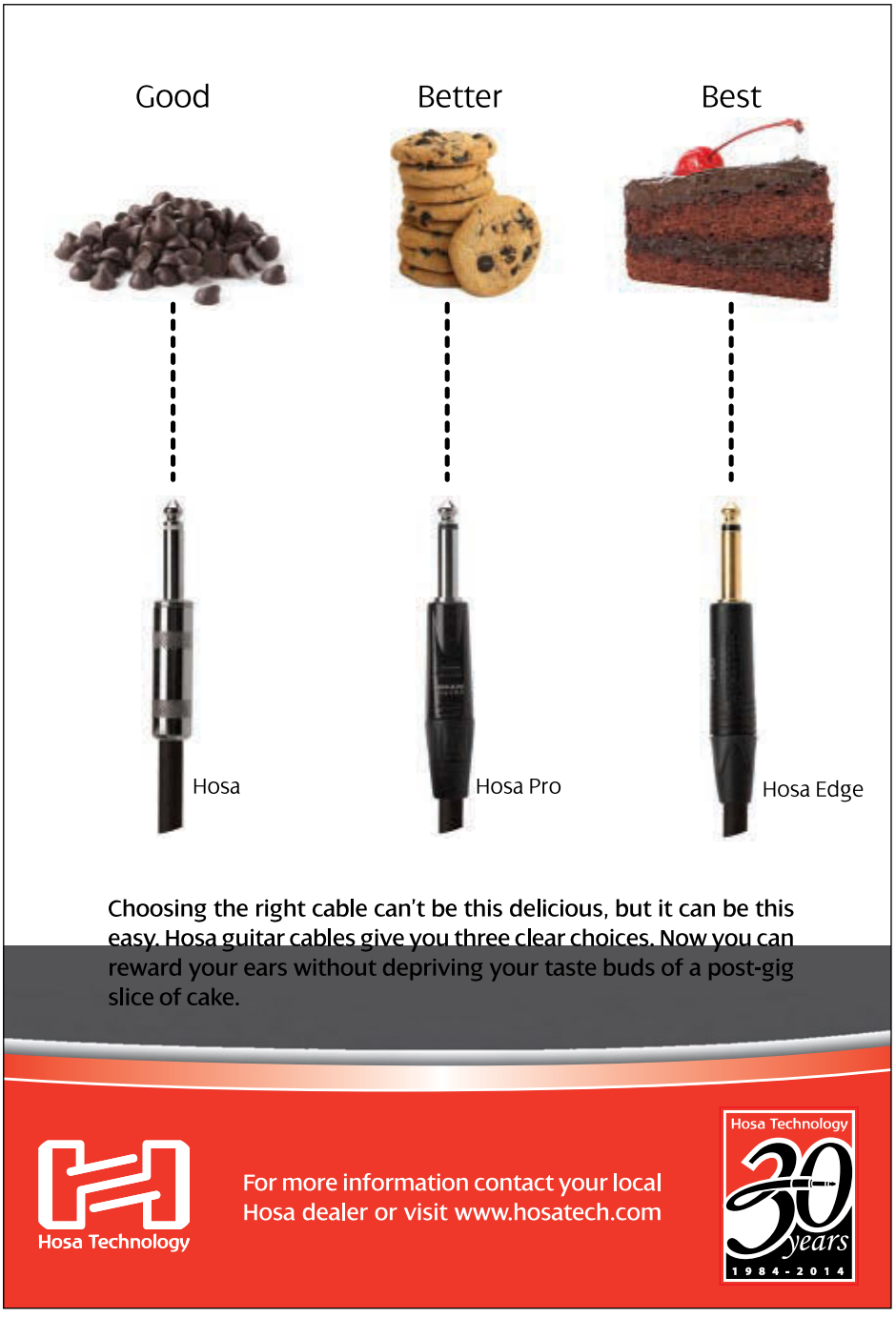
For the question-and-answer part of the hour, host Jon Kirkman asked him a few toughies. For example: What do the other former members of Genesis think about Hackett revisiting the group's music through worldwide tours? Hackett joked they probably just wish they'd thought of it first. But he maintains he does it because he has a great affinity for the discography. "You could either take a competitive approach, or you could say I was in a band with people who were a bunch of fantastic songwriters," Hackett said. "There wasn't a duff songwriter amongst the band when I was part of it."

When a fan suggested that he do the Genesis concept album *The Lamb Lies Down on Broadway* live, Hackett agreed it was "probably a really good idea." But new, original music is his focus for the future, and Hackett said he might actually end up being his own opening act on an upcoming tour. He quipped that a third Genesis redux would be "very cheesy."

Hackett's two performances in the ship's formal Pantheon Theatre were full-on shows, with the master guitarist wielding his beloved 1957 goldtop Les Paul as Nad Sylvan belted out Genesis classics like "Dance on a Volcano" and "The Musical Box," while UK's John Wetton guested on "Fifth on Fifth." Hackett was charming and warm throughout, playfully asking his devout followers: "All those numbers in 7/8—can you dance to that?" (Of course they could.) It wasn't exactly a Squackett reunion when Chris Squire joined his old friend onstage to jam on a rendition of "All Along the Watchtower," but it was a memorable moment.

During the UK Storytellers session, Eddie Jobson and Wetton discussed their time in King Crimson with Robert Fripp in the early '70s, as well as UK's brief life from 1977-80 (the current lineup with drummer Gary Husband and guitarist Alex Machacek reunited in 2011), and also about their time playing with other legendary acts like Roxy Music and Frank Zappa. Wetton performed several acoustic numbers, too, including "The Night Watch."

There probably weren't many casual proggers among this crowd, so the caliber went quite high for questions asked by the audience, many of them musicians themselves. Kirkman bravely asked Tony Levin what it was like to work with John Lennon in the studio on *Continued on p. 81*



Sea Talk with the Stick Man

A chat with first-time cruiser Tony Levin about his experience aboard the MSC Divina.

Tony Levin (the longtime bassist for Peter Gabriel) started playing the Chapman Stick in the mid-'70s. On the cruise he joked that he'd only just mastered it. "That was last year," he said.

How did you become part of the lineup for Cruise to the Edge 2014?
It almost came together the year before, for The Crimson ProjeKCt to play it, but that didn't work out. So, for this year's cruise I contacted the promoters and asked if Stick Men could be part of the fun. I'm happy it all worked out.

What were your initial thoughts of the cruise, and how did the actual experience measure up?
I expected it to be fun and relaxing, but it was more of both than I'd expected: Great bands to hear, great facilities, and a very nice atmosphere with all the people who share a passion for progressive rock. I've been part of festivals that had many groups playing, but the thing that makes this stand out is sharing the week with the fans and with the bands, and in a setting that's in itself a lot of fun.

If you were giving a state of the union on the matter of progressive rock …
I'm no expert on the current status of the industry. We in Stick Men, and I, in other projects, just enjoy playing our music. We don't try to make it specifically fit into a genre, we just make the music we want to be playing. But it certainly is progressive rock, and we can't help but notice that a lot of those who gravitate to our music also like King Crimson, Yes, and other classic progressive groups.

I can't predict how the genre will fare in the coming years, but I think that some music takes more effort to get into—to understand—than others, and I think there is an additional value to that complex music, both for the listener and the players. So I'm happy to be enveloped in that adventure, wherever it takes us.

What is the essence of "prog rock" to you?
I keep using the word "progressive"—here's why. To me, progressive music implies music that's not settling for the way things have been done, but trying to forge new directions. Terms get complex because the bands that did that back in the '60s and '70s—and knocked the socks off many of us who hadn't heard anything like it—those bands were playing progressive rock that got called "prog rock."

So, does that phrase refer to music that is looking for new directions, or to music that sounds like those bands did in the '60s and '70s? Both are valid, and there are some great bands doing either or both. For us in Stick Men, we're not trying to sound like the classic prog bands did, we're trying to push ourselves to do new things, whether we succeed or not. So it seems to make things clearer to describe that as progressive, rather than prog.

Can you comment on performing at sea? Did any Stick Men get seasick?
We were all, happily, comfortable at sea. The pool show, with high winds, was a challenge … everything needed to be fastened onstage or it'd blow away. But having Eddie Jobson sit in with us on a few pieces and jams more than made up for that distraction.

What were the highlights of your experience? Did you have a favorite stage or other general area on the MSC Divina?
I liked the ship a lot, so I didn't spend much time in Cozumel. If I had to pick high points, it'd be our opening night in a club … great turnout and a lot of excitement about the music, even though we'd all just arrived on the boat. And just the general days of hanging out among fans of the music. It's not at all like after shows, because you're not running off, so there's none of the hurry that's there when you meet people after shows.

Photo by Armando Gallo

Double Fantasy and *Milk and Honey* before he was killed. While Levin said he had a tough time dealing with Lennon's death, the working relationship was special—even smooth. "It was really confrontational in a New York kind of way, and being a New Yorker myself at the time, I was comfortable with that," Levin shared. "He came right up to me and said, 'They tell me you're good, just don't play too many notes.' And I said, 'Don't worry, I won't. We got along excellently because of that."

Levin and the other two Stick Men—guitarist Markus Reuter (King Crimson) and drummer Pat Mastelotto (King Crimson, Mr. Mister)—discussed their sophisticated instruments [see sidebar, "Onboard Gems"], and Levin even admitted to putting away the fretless for many years when Jaco Pastorious came around. "He played the way I didn't realize I was dreaming of playing." Levin also revealed how upright bassist and composer

"It's like talking with your record collection. You could just go around with a beer and talk with everyone, and a lot of the old legends would just hang around in bars late at night. —Petter Sandström

Oscar Pettiford subconsciously informed his work from a young age. (Levin is currently revisiting this early-'50s "cool" jazz influence as a side project with his older brother Pete.)

Many in the audience were curious about Reuter's multi-instrumental talents, prompting an explanation of why his heart is in guitar. "I love playing the guitar because my finger touches the string directly and I have the impression that the divine influence can go directly into the string and translate."

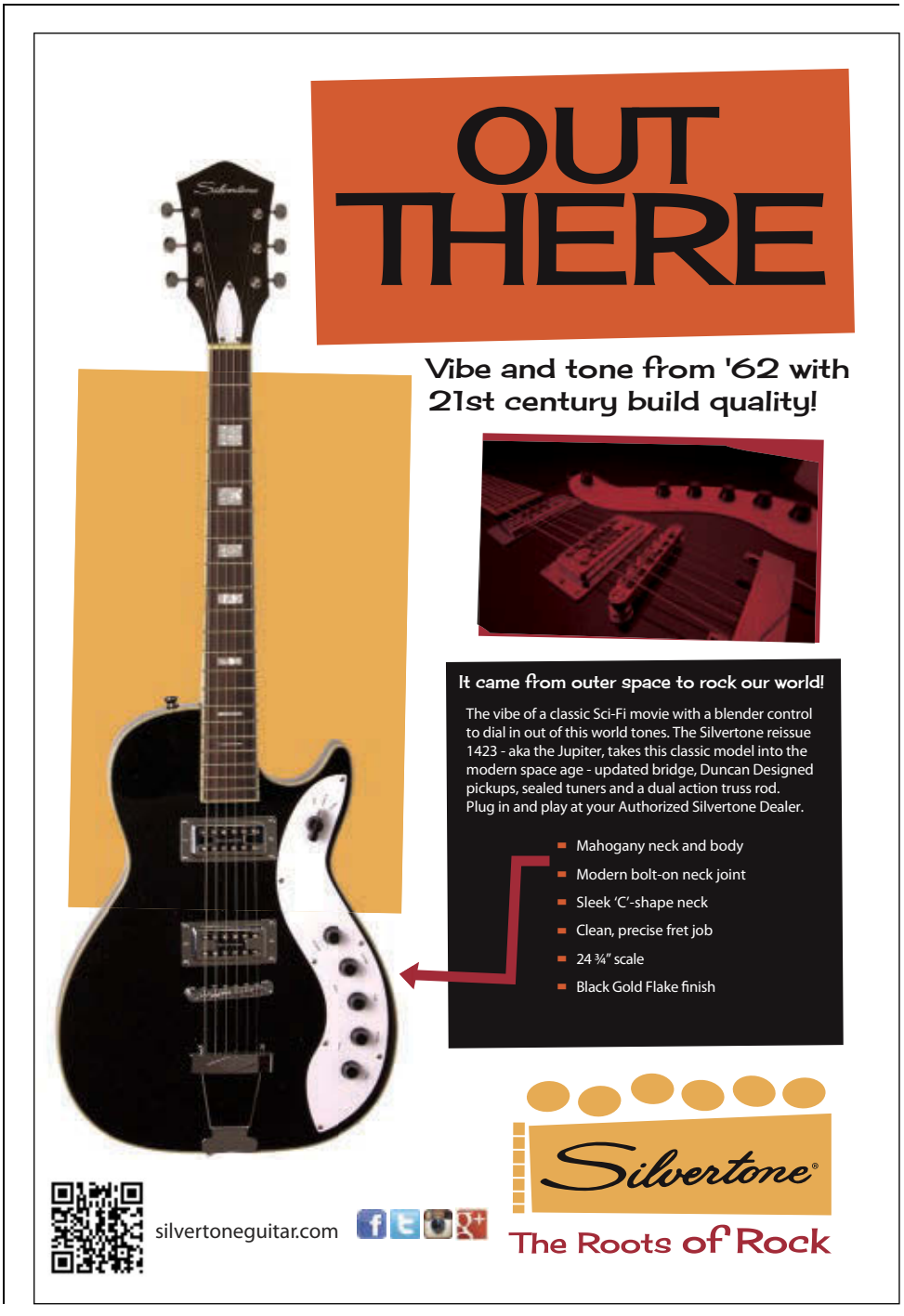
Motion of the Ocean

This event also provided a rare and special opportunity for everyone aboard to socialize and mingle with their fellow passengers.

This wasn't Kurdt Vanderhoof's first cruise, but Presto Ballet's founder and guitarist said it was the first one where he wanted to see every show. "I hate to see it end," he shared after his performance in the Atrium on the last day of the cruise. "I like all the bands, and I *love* most of them." Vanderhoof, whose other band Metal Church is a far cry from the sounds filling the Divina, started Presto Ballet to pay tribute to the progressive rock bands he cut his teeth on. "We're regressive prog!" he says laughing. "We play regressive rock."

It can be hard for bands like his to find paying gigs. In fact, Presto Ballet has been around for six years and has released five albums, but Cruise to the Edge was only the group's fourth live gig. For Vanderhoof, it was *the* gig: "It's a boat full of people who are actually going to listen."

The ship's relaxed atmosphere provided many opportunities for the relatively young group of musicians in the Swedish sextet Moon Safari to meet some of their heroes. "It's like talking with your record collection," says lead singer/guitarist Petter Sandström. "You could just go around with a beer and talk with everyone, and a lot of the old legends would just hang around in bars late at night. I talked a lot with Eddie Jobson. He was hanging at the late-night prog jam almost every night."



Top: The MSC Divina at port in Cozumel, Mexico. The ship has 16 floors, a baker's dozen eateries and lounges, a casino, and a spa.

Bottom: The Squackett team of Steve Hackett and Chris Squire reunites for "All Along the Watchtower," with a little help from UK's John Wetton.

For Moon Safari's bassist Johan Westerlund, it was a chance to witness some of the greatest trailblazers of adventurous bass playing, like the great Squire. "He revolutionized it," Westerlund attests. "In the mix of *Fragile*, you can hear something really strange going on, something that was brand new. They just played all over the place, the guitar can be low … there was no logic to it. It was not the same way it was done before. He used the bass like an actual instrument, not just to fill out the bass range. You can tell that everyone wants to play like him."

And so it would make sense to go to the source and ask the man himself: What is prog? "Generally it's a term used for anything that's a bit more complicated than three-chord songs—even though there's nothing wrong with three-chord songs in their own right," Squire says. "But prog rock has always had a classical influence, more interesting chord changes, and generally more complicated styles of playing. That's really what prog rock means to me. I think most artists that have been involved in prog have generally been more clever players than is necessary to be in a lot of rock 'n' roll, which is all about feel. We in Yes have always developed our interest in that as well, to promote the feel side of music as well as the musicality."

As Genesis' "Land of Confusion" played in the background, Vanderhoof offered a heartfelt reason for why he made the trip. "For me, progressive rock is about going against the grain, and music is the main focus. Music is paramount. It's not about money, it's not about fashion, it's not about hits, it's not about being cool, it's not about chicks, it's not about drugs, it's not about beer—it's not about *any* of that. It's about music."

Top: Photo by Tessa Jeffers **Bottom:** Photo by Robert Juckett

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Doubling Down on Riffs

BY JOE GORE

It's no secret that the massive sounds of our favorite riffs often result from replicating a part across multiple tracks. But that technique raises countless questions:

- What's more effective: capturing a single performance with multiple mics/amps, or doubling it with multiple performances?
- If doubling a part makes it sound bigger, is it even better to quadruple—or *octuple*?
- Should the tracks be panned wide to fill the stereo soundstage, or positioned close together to better mimic a single instrument?
- Do added effects heighten the impact, or just muddy the waters?

An original ReAmp—a "reverse direct box" that lets you route tracks from your DAW through amps and stompboxes. Nowadays the circuit appears in everything from the $99 Radial ProRMP to the $1,900 Millennia TD-1 preamp.

Oh, you already know the answer: It depends.

THE END.

Oh, still here? Dang—thought I could get off easy this month. Naturally, musical context dictates the best approach. But you stand a better chance of recognizing it if you can envision each option. With that goal in mind, I borrowed some tracks from my brilliant bandmate, drummer Dawn Richardson. I added a bass part, improvised a riff, and started layering.

Track 1a is a rough mix of drums and bass alone, and **Track 1b** adds a single guitar track, panned dead center. (If you're reading this in print, refer to the online version, which has embedded audio clips.)

Okay, not a riff for the ages, but it'll do. I recorded directly into Logic Pro, but ran the signal from my DAW to an amp using a ReAmp—the "reverse direct box" invented by John Cuniberti, Joe Satriani's longtime engineer. These days Radial licenses the circuit and includes it in such products as the $99 Radial ProPMP. With a ReAmp you can send recorded tracks from your DAW to instrument-level gear such as amps and stompboxes, and then re-record the results. It's one of best purchases a recording guitarist can make.

The **Track 1b** version, routed through a funky homemade germanium overdrive and a Kennedy-era Fender Tremolux, doesn't sound *bad*, exactly, but it feels "smaller than life." The upper mids are overbearing, though they might sit better if they weren't panned center, near the midrange-y snare.

Via the magic of ReAmping, I re-recorded the riff, this time sending it to two individually miked amps. **Track 2a** has both parts panned together, but slightly to one side, away from the snare. **Track 2b** has a slight stereo spread, and **Track 2c** pans them far left and right. **Track 2d** adds a third track just left of center, and **Track 2e** is similar, but with the left/right tracks much quieter. (It may help to listen on headphones.)

Which choice is best? Duh—it depends!

Track 2a has a nice bluntness. **Track 2c** sounds fullest, but without a strong musical object in the center of the stereo field, it's like a frame with no picture, though it might sound good surrounding a vocal. **Track 2d** works better as an instrumental, and **2e** is a compromise that feels like a single track, but carries more weight than the original **Track 1b**.

Phase for days. When you double tracks, be mindful of phasing issues. There's not much of a science to it, or at least, there doesn't have to be: Just flip the phase-reverse switch on one of your doubled tracks. Sometimes one option sounds clearly superior, and sometimes it's a toss-up. (Analog mixer channels almost always have a dedicated phase switch, but on a DAW, you may need to search for the function among the plug-ins. In Logic Pro, for example, there's phase-reverse button within the Gain plug-in.)

Don't be surprised if you need to turn guitar tracks down as you pan them left and right. A track that's barely audible when fighting for attention in the center of the stereo field can be overbearing when shunted to one side.

Digital deception. So far, we've heard only one guitar performance, just routed through multiple amps. Before we move on to actual doubling, let's explore a lazier option: faking doubles within your DAW.

I returned to the original one-amp version, only this time I copied the

recording to a separate track. For **Track 3** I nudged one audio region slightly ahead, and then panned the two tracks in stereo. The gap between them (about 1,000 samples) is too short to be perceived as a delay, yet it creates a strong, if tiresome, stereo image.

If you modulate one of the tracks, you get chorusing/phasing, as in **Track 3b**. Not a bad sound, necessarily, but it gets old fast. **Track 3c** is hipper to my ear. I added gobs of trashy spring reverb to the duplicate track, lowered the level, and panned it far left, with the original, drier sound at around 2 o'clock. (You can get a similar effect by miking both a dry amp and one with heavy reverb.)

Real doubling. Now let's look at doubling the old-fashioned way: Playing the damn part more than once!

Consider these options: In **Track 4a**, I've replayed the riff part through the original Fender amp, and combined the two performances, panned wide. This approach instantly creates more complex and volatile stereo animation. Your ear ricochets from speaker to speaker, registering the subtle differences between the performances. (There are *always* differences, no matter how tight the playing.) **Track 4b** is similar, but with a different amp (a Fender-like Divided by 13 combo) on the double. **Track 4c** swaps the Divided by 13 for a Marshall 18-watt clone. And **Track 4d** has all three amps, plus I've added in the heavy-reverb part from **Track 3c**, but only in the last four bars for that extra push over the cliff. (Do I even need to mention that varying the number of doubles over the course of a song is a good way to add variety and heighten dynamics?)

Overdub overkill. So what's the ideal number of overdubs before you reach the point of diminishing returns? That's easy—three! Or at least that's what Scott Ian from Anthrax once told me, and the dude knows a thing or two about doubling fat riffs. But the real answer is—wait for it—it depends. Even with tight performances, definition starts to blur with more than three or four doubles. There are exceptions, though, like the 97 jillion doubles producer Chris Thomas used to create the wall of power-chord sludge on the Sex Pistols' *Never Mind the Bollocks*. Steve Jones was the never the most precise of players, and those guitars are a bloody mess. A bloody *good* mess.

Sometimes it's effective to record a single guitar performance through multiple amps, either simultaneously, or one at a time via a ReAmp. Left to right: Divided by 13 CJ 11 with Royer R-121 ribbon mic, brownface Fender Tremolux and custom cab with Neumann TLM 103 condenser mic, and Marshall 18-watt clone with Shure SM57 dynamic mic.

So in honor of Jonesy, here are few over-the-top overdubs, starting where **Track 4d** left off.

Track 5a adds three additional channels of guitar, generated from the original performance, but ReAmped through multiple amps. **Track 5b** also features six tracks (seven after the reverb part enters), but these are honest-to-goodness doubles, performed separately, but all through the same amp. **Track 5c** is similar, but with a mix of analog amps. **Track 5d** adds three additional tracks of modeled amps. **Track 5e** is the full Monty: 18 tracks of analog guitar (six separate performances through three amps each), plus three tracks of modeled amps. And **Track 5f** provides some much needed perspective: We're back to one guitar and one amp in mono.

Of the 18 versions, which sucks least? Say it with me, people! *It depends*. And remember, I recorded all tracks with a single guitar (a korina Jazzmaster with P-90s assembled from Warmoth parts). We didn't even consider the dimension that multiple guitars can add. Why not experiment on your own this month? If you take five minutes per overdub, you can layer 7,440 parts before next issue.

And oh—did you notice a big difference in quality when I started adding virtual amps to the mix? Me neither. We'll revisit to that topic very soon. Bwa-ha-ha.

JOE GORE *has recorded and performed with Tom Waits, PJ Harvey, Tracy Chapman, Courtney Love, Marianne Faithfull, Les Claypool, Flea, DJ Shadow, John Cale, and many other artists. Joe has written thousands of articles about music and helps develop music tools for Apple and other clients. He blogs at tonefiend.com.*

MINIFOOGERS

100% ANALOG GUITAR PEDALS

DELAY • TREM • DRIVE • BOOST • RING • UNDER $200

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MF BOOST

The MF Boost is an Expression enhanced, twin topology boost pedal that allows you to select between an articulate VCA signal path and a colored OTA signal path. This completely unique boost design works with your guitar and amplifier to conjure boutique sound and responsiveness from any guitar & amplifier combination. Its natural compression and sound enhancement also bring out the best tone and performance in other effects pedals.

MF DRIVE

The MF Drive is a unique, filter-based overdrive pedal that employs a Moog Ladder Filter, boutique FET amplifiers, and classic OTAs in its drive section making it highly reactive to input gain and picking dynamics. The bi-polar tone control and sweep-able filter work with input gain to offer each player completely customizable sounds from creamy British overdrive to cranked American tube amplifier and even fuzz. When the filter Peak switch is engaged and an expression pedal is connected, the harmonic content is shifted to the filter's cutoff position adding tonal and dirty wah performance possibilities not found elsewhere.

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MF RING

The MF Ring is an analog ring modulator that is based on the best selling Ring Mod in the world, the Moogerfooger MF-102. Its unique tone voicing circuit adds a new musical dimension to ring modification, making it easy dial in everything from octaves and choral dissonance to harmonic undertones and synthesized lead lines. The expression pedal input provides hands-free control of the Freq control for sound sweeps, pitch shifting effects, and playing between two scales on the fly. Unlike other ring modulation pedals, the MF Ring can also be battery powered.

MF TREM

The MF Trem is an analog tremolo pedal based around a balanced modulator and Sub Audio VCO. This unique design creates a wide range of tremolo effects that are based on phase cancellation and addition. Create classic optical and hard tremolo effects that are reactive to harmonic content, or push up the depth control and shift into the beginnings of lush phasing and chorus. The variable Shape control interacts directly with Tone and Mix to craft subtle swells and gallops to rhythmic percussive, and swirling effects. An expression pedal input adds control over tremolo Speed for beautiful, hands-free swells and rotary effects.

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MF DELAY

The MF Delay is a 100% analog delay providing 35mS-700mS of rich, blooming analog repeats. At shorter settings, the MF Delay is fast and articulate. This is perfect for creating classic slap-back sounds with expressive swells, and even plate-verbs. At medium and long settings, the repeats become darker, naturally trailing into a beautiful warmth and character not found in any other delay pedal. Connect an expression pedal and dynamically control feedback swells, or switch to delay time to create chorus/flange and tape delay effects. The MF Delay was designed with over 300 carefully selected components including 4 Bucket Brigade Delay chips, a discrete JFET input stage, and a vintage compander circuit for superior tone and feel.

INTRODUCING MINIFOOGERS

Queens of The Stone Age guitarist, Troy Van Leeuwen, explores the fundamental capabilities of all 5 Minifooger Analog Effects Pedals. Each Minifooger is assembled by hand at the Moog factory in downtown Ashville, NC in a rugged, cast aluminum enclosure and features a 100% analog signal path, true bypass design, optional battery power, and a single expression pedal input that provides hands-free control of one specified parameter.

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Photo by Michael Weintrob

HERE'S JOHNNY

How a white boy from Texas made blues guitar history.

BY TED DROZDOWSKI

Sun Records chieftain Sam Phillips described the voice of his pre-Elvis discovery Howlin' Wolf as a sound from "where the soul of man never dies." For young John Dawson Winter III, the blend of gravel, whiskey, mud, and madness in Wolf's singing unearthed a well he still draws from 60 years later.

"'Somebody Walking in My Home' by Howlin' Wolf is the first blues song I remember hearing," Johnny Winter recalls. "I was in my bedroom listening to the transistor radio, and right from the beginning I knew blues was it for me. It had so much feeling. I just loved it. And I could really relate to the black experience. Most people in Texas didn't like black people because they were too dark, and they didn't like me because I was too white. I got that even when I was 12 and started playing guitar. By then I knew blues was what I wanted to play, and I still come at it from an emotional perspective—not technical."

Johnny Winter's favorite blues musician of all time is Muddy Waters. Winter and Waters, friends and longtime collaborators, are pictured here with Blue Brothers John Belushi and Dan Aykroyd.

Nonetheless, it was the conflagrant intensity of Winter's two-fingered picking, the bared-fang snarl of his tone, and the mix of sand and kerosene in his own voice that skyrocketed him from the Texas psychedelic club scene into the international music spotlight less than a year after he recorded his debut, *The Progressive Blues Experiment*, on the stage of Austin's Vulcan Gas Company in 1968. By the end of 1969 he'd released his major-label debut, *Johnny Winter*, and the follow-up, *Second Winter*, and played Woodstock, laying out blueprints for the future of American blues-rock and even Southern rock.

Although Winter is currently enjoying a surprising late-career renaissance thanks to his recharged stage presence, a documentary film, and a spate of releases, it's the images of him from 1969 to 1974 that are burned into the retina of rock history: rail thin and wrapped like a spider around the 1963 Gibson Firebird that still accompanies him onstage, wraith-like thanks to his albinism and long hair, literally attacking the strings.

Winter's star continued to rise during those years, after Columbia Records persuaded him to form a new band with co-guitarist Rick Derringer that cut the influential *Johnny Winter And* and *Still Alive and Well* sets. Those albums along with the Allman Brothers first titles cast the die for two-guitar blues-rock ensemble playing. Many think the four LPs Winter made with Derringer define his golden era, but Winter still complains that Derringer played too much and too loud. "All I need to play well is a good strong snare beat and other musicians who don't get in the way," he says.

Winter prefers the string of discs he made in the late 1970s with blues groundbreaker Muddy Waters and Waters' band, his own *Nothin' But the Blues*, and the Grammy-winning trio *Hard Again*, *I'm Ready*, and *King Bee* that he produced for Waters.

But something was amiss in those glory days. By the early '70s Winter had become a heroin addict. And while he was able to kick that drug, he got hooked on methadone, which, along with alcohol abuse, put Winter on a long spiral that brought him to the bottom roughly a decade ago. Sure, there were some high-notch concerts and recordings along the way, like 1984's *Guitar Slinger* and 1992's *Hey, Where's Your Brother?*—a nod to his pop-hit instrumentalist sibling Edgar Winter. But by the time Johnny met his current manager, co-guitarist, producer and, in practical terms, savior Paul Nelson in 2004, Winter seemed like a shell of himself, appearing exhausted and occasionally out of tune onstage, revived only by the spirit of the blues that seemingly inhabits his bloodstream.

"I had a good time and enjoyed drugs and drinking," he says by phone from his Connecticut home, "but I overdid it. It was great in my 20s. The older I got the worse it was for me. It took me a long time to figure out that takin' dope is *not* good for you." He chuckles. "Now, I feel great. Physical therapy helps, but so does not taking drugs or drinking. A lot of people I know are dead. I could have died

Photo courtesy of Greg Olliver

"I love playing the blues now as much as when I was 12. Maybe more. I could make albums of songs by Gatemouth Brown and Jimmy Reed and Muddy until I drop."

JOHNNY WINTER'S GEAR

GUITARS
1963 Gibson Firebird
Dean "Z" series Johnny Winter signature model

AMP
Music Man 4x10 combo

EFFECT
Boss CE-2

STRINGS, PICKS & SLIDES
DR Pure Blues .010–.046 gauge
Fender medium thumb picks
Dunlop Johnny Winter Texas Slider

EarthQuaker Devices

Dual Channel, Multiple Voice, Adjustable Bandwidth, Maximum Overdrive (with Boost)

Dirty Polyphonic Harmonizer

ON CANDID CAMERA

Sure, director Greg Olliver's rock-doc *Johnny Winter: Down and Dirty* provides a through-the-Winnebago-windshield view of the life of the Texas guitar legend as he travels the U.S. and Japan, and reminisces about his adventures with Jimi Hendrix, Janis Joplin, and his idol, Muddy Waters. But it also busts myths about his health and history, thanks to Winter's relentless candor.

Early in the movie, which premiered at this year's South By Southwest Film Festival, we see Winter receiving a visit from a physical therapist and struggling through exercises designed to strengthen and lengthen his back muscles, atrophied from years of bad posture, chemical abuse, and general neglect.

"Not everybody would allow a filmmaker to show them being vulnerable like that," says Olliver, who also directed the critically heralded 2010 documentary *Lemmy*, about Mötorhead's Lemmy Kilmister. "Johnny isn't a rock star. He's a real person and one of the most frank and open people I've ever interviewed, which made the two years I spent working on *Down and Dirty* really fun. Not once did he ever hold back."

But viewers also see Winter enjoying life—horsing with his friends and his accomplice, manager/guitarist Paul Nelson, and taking pleasure in simple, but deep, pleasures like spinning a Robert Johnson record on a phonograph. There's also plenty of live performance footage and cameos from Billy Gibbons, Joe Perry, Derek Trucks, and others commenting on the power and durability of Winter's influence and legacy.

Olliver says his decision to train his lens on Winter came organically. Like the 6-string legend, Olliver was born and raised in Texas and grew up on the sound of blues from its originators and well as Lone Star heroes the Fabulous Thunderbirds and ZZ Top. When Olliver approached Winter and Nelson, they readily accepted.

Photo courtesy of Greg Olliver

Once Olliver got on the Winnebago, he discovered another bond with Winter: a love of horror and science-fiction films. "Johnny loves to stay up late at night on the bus watching B movies," Olliver recounts. His taste varies widely. Two favorites are the 1956 classic *Forbidden Planet* and the hideously bad 1972 Ray Milland vehicle *Frogs*, which, to borrow Olliver's description, "is about a bunch of frogs hopping around a plantation killing people."

Olliver's own project between *Lemmy* and *Down and Dirty* was, a genuinely creepy horror film that's just been released in the U.K. "Johnny said that he loved it," Olliver notes.

The glue between his two documentaries and *Devoured* is Olliver's gift for storytelling. But there are some stories that didn't make the final cut of *Down and Dirty*. "When we were in Hong Kong, Johnny said, 'Hey, we should find some opium, and then we're gonna put it up our butts.' I said, 'Johnny, if there are two things I'm not going to do on this trip, it's find opium and put it up my butt.'

"When I told [veteran Winter and Double Trouble bassist] Tommy Shannon that story, he said, 'You know, there was a time and a place when that sort of thing was perfectly acceptable.'"

For updates on the film's availability, check johnnywinterdownanddirty.com.

a bunch of times. Maybe I died years ago, but God was on my side."

Perhaps that accounts for Winter's ongoing resurrection. In 2011 he broke a seven-year recording hiatus with the album *Roots*, revisiting some of his favorite blues classics with the help of such guests as Warren Haynes, Derek Trucks, Susan Tedeschi, Vince Gill, Edgar Winter, and others. The disc was heralded as a partial return to form.

This February the four-disc retrospective *True To the Blues: The Johnny Winter Story* was released. His upcoming *Step Back*, due in September, amps up his previous studio recording's strategy with an edgier, more rocking approach and appearances by Eric Clapton, Leslie West, and Billy Gibbons, to name a few. And the documentary *Johnny Winter: Down and Dirty* debuted at the South By Southwest Film Festival in March. The movie frankly chronicles both Winter's storied history and the past two years of his life, which meant that director Greg Olliver was a regular aboard the Winnebago the guitarist uses to travel to about 120 dates annually.

All of this, and the fact that Winter is concentrating on recording and playing so many of the songs that first drew him into blues, makes him as happy as a 70-year-old kid in a candy store. "I never

thought I'd reach this age, but I'm damn glad I did," the high-speed string-slinger says. "I'd rather be old than dead. And I love playing the blues now as much as when I was 12. Maybe more. I could make albums of songs by Gatemouth Brown and Jimmy Reed and Muddy until I drop."

Winter still has a bucket list: "I'd like to write some more original numbers," he says, "but I haven't had any song ideas since 2004. I'd also like to win a Grammy for one of my own records. And I'd like to go to Egypt—not even to play music, but just to see the pyramids and stuff. The Rock and Roll Hall of Fame would be nice, too, but I'd rather have the Grammy. And I want to get it for playing good blues."

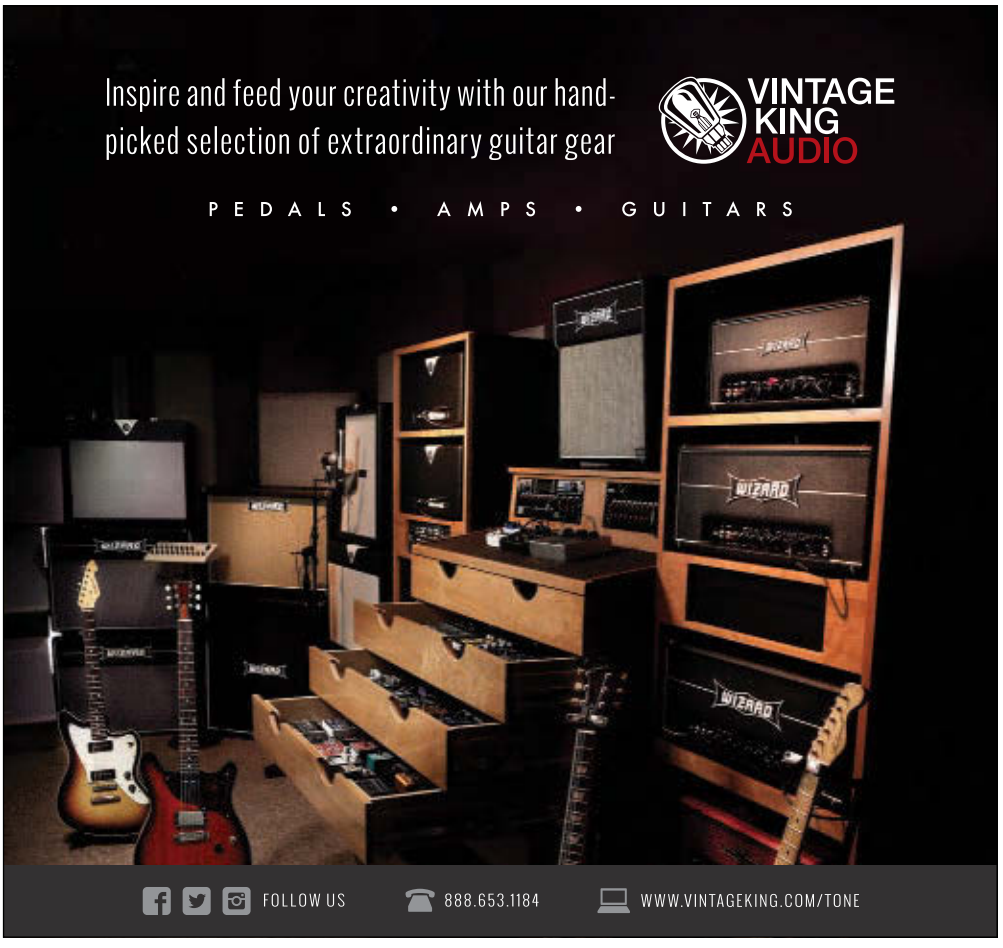
Another complaint Winter airs is that he considers his early records more rock than blues: "I really wanted to play blues, but in the early '60s the white people didn't want to hear us play that, especially in Texas, so when we started out it was more rock and R&B. It was frustrating, because I was in love with blues."

Winter attended his first blues show at age 14: a Ray Charles concert at the Municipal Auditorium in his native Beaumont, Texas. Three years later he had a pivotal experience at that city's Raven club. "I went to see B.B. King play for about 1,500 to 2,000 people—all black. It was great music, nobody bothered us, and after I met him, B.B. let me play," he recounts. "It felt great to get a standing ovation from an all-black audience. I felt like I had to be playing the music right. B.B. didn't even know if I could play. If I was in his place I don't think I would have let me. He's one of the nicest people in the world."

By that time Winter's oddball, lightning-strike thumb-and-forefinger picking style was already well developed. "It seemed to come naturally to me," he observes. "A lot of the older black guys played with thumbpicks, but I started using one because I liked Chet Atkins and Merle Travis. Chet got his style from Merle. They probably influenced my speed, too. I've always played hard and fast. After all these years, I still play the way I did when I was 15. And my gear hasn't changed much since 1970 when I got my Firebird."

Winter acquired that iconic instrument at a festival, where a guitar dealer from St. Louis brought it and a clutch of other 6-strings to sell to the musicians on the bill. "I was already playing Les Pauls and Stratocasters," Winter recounts. "The first really good guitar I'd gotten was a Black Beauty 'fretless wonder,' but when I saw that Firebird I thought, 'I've got to try that!' The neck's been broken four or five times over the years. I keep getting it fixed. But everything is stock. I always thought it was fine the way it was, so I never messed with it."

Winter still plays the Music Man 4x10 combo amps that Muddy Waters turned him onto during their '70s collaborations,



RIGHT-HAND MAN

> “It’s simple. I stay the hell out of his way and make everything sound bigger.”

Paul Nelson is Johnny Winter’s supporting guitarist, producer, and manager, but his most important role is friend. If Nelson hadn’t made what was essentially a one-man intervention in Winter’s life nearly a decade ago, the guitar hero who ascended from Texas dive bars to the stage at Woodstock in a single year after recording his debut album would likely be pushing up posies instead of bending strings.

They met while Winter was cutting 2004’s *I’m a Bluesman* at Carriage House Studios in Stamford, Connecticut. “Johnny heard me playing some blues next door during a session I was doing for the World Wrestling Federation, and invited me to meet him,” Nelson recounts. He was recruited as a songwriter and second guitarist on the project, and when it was over Winter invited Nelson on the road.

“What he liked about me is that I was one of the few guitarists he played with who didn’t step all over his playing,” Nelson recounts. “Johnny said, ‘With everybody else, it was always a guitar war.’ I only do what needs to be done. If Johnny plays single notes, I play chords. If he plays low, I play high. It’s simple. I stay the hell out of his way and make everything sound bigger.

“Johnny took me under his wing and immediately started teaching me the blues riffs he’d learned from Muddy Waters,” Nelson says. “As I became more comfortable I started telling him the emperor had no clothes. He was singing and playing like crap, and practically falling asleep onstage. This had gone on for years with nobody trying to help him. So he asked me if I’d manage him. I said, ‘Yes, if you give up the drugs and drinking, start doing something about your health, and get back to being Johnny Winter.’ Believe me, there was a lot of screaming and fighting along the way, but he did it. There were huge changes the moment the drugs and stuff were gone—but try telling a rock star from the ’60s that!

“Some days,” ponders Nelson, “I wonder, am I his producer, his band mate, his manager, his pal? Or maybe I’m really the luckiest fan in the world.”

Nelson was well into a successful career as a session player, producer, solo artist, and hard-rock guru with credits ranging from Leslie West to Los Lobos to Steve Morse when he signed on as Winter’s manager. As a youth, he was already enraptured by the playing of Winter, Billy Gibbons, Jimi Hendrix, Albert King, Jeff Beck, Wes Montgomery, and Larry Carlton when he attended Boston’s Berklee College of Music, then went on to study with Mike Stern, Steve Kahn, and Steve Vai. So Nelson had plenty of 6-string smarts and studio skills to apply to Winter’s 2011 album *Roots*, as well as the new album *Step Back*.

Both sets feature blues chestnuts and all-star casts, with the lineup on *Step Back* including Eric Clapton, Ben Harper, Brian Setzer, Leslie West, Billy Gibbons, Joe Perry, Dr. John, and harmonica demon Jason Ricci. Nelson also duets with Winter on “Killing Floor,” a song originally recorded by blues giant Howlin’ Wolf for Chess Records in 1964.

“When Johnny was ready to make this album, he picked the songs in 15 minutes,” says Nelson. “These are songs he’s loved all his life.” Nelson had the rhythm section learn the original version of each of the blues classics, and then had them learn another version recorded a few decades later before they worked with Winter on the album’s arrangements. “That way they’ve got perspective going into the session with Johnny,” he explains. When the basic tracks were done, they were sent to Winter’s handpicked guests, who added their parts.

To make the guest guitarists’ parts gel with Winter’s playing, Nelson duplicated the mic setups used by each player. “Clapton, for example, used a small amp and overhead mikes,” notes Nelson, “while Leslie West put a microphone right in front of his amp’s speaker. When I use the same approach to record Johnny, it sounds like they cut their guitar parts together in the same room.” Winter owes two more albums to Megaforce Records per his contract, and Nelson has also signed a deal to record solo for Megaforce.

Nelson says that winning a Grammy and being inducted into the Rock and Roll Hall of Fame top Winter’s bucket list. “He’s told me, ‘I’m at a point in my life where I love receiving awards. Give me awards.’”

Photo by Michael Weintrob

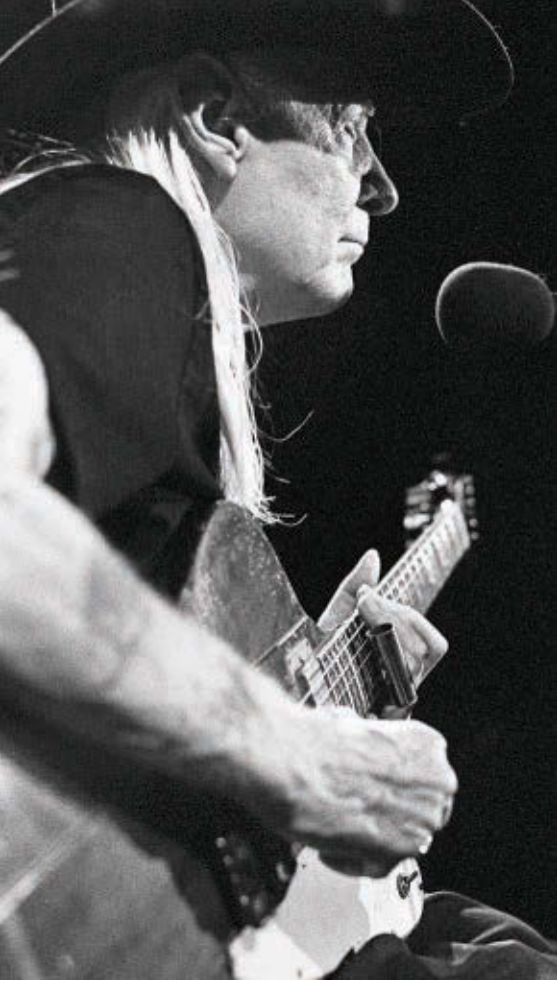


Photo courtesy of Greg Olliver

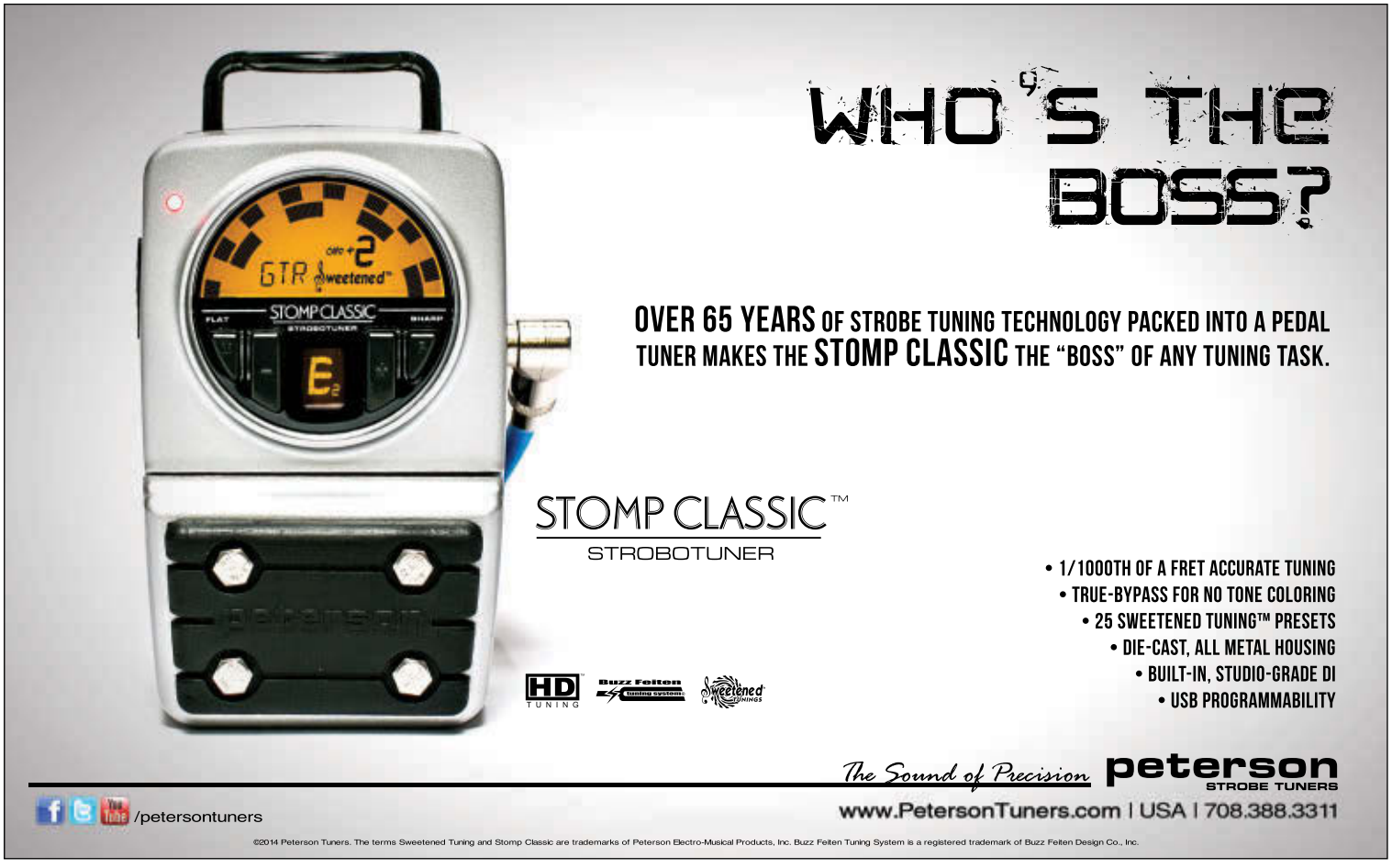
favoring those over the Fender Super Reverbs he'd used until then due to their higher wattage. His settings: volume and treble on 10, everything else at zero. And Winter's one effect remains an old Boss CE-2 chorus pedal, "just to make things a little fuller."

Waters was also a major influence on Winter's slide playing, which is as much a signature as his ripping single-note solos. "Muddy, Elmore James, Robert Johnson, Son House—they got me interested in slide," Winter explains. "I use a Dunlop slide that's snug on my finger, so I can fret with the slide and move faster and more exactly." He favors open D and G tunings, and sometimes A. "It all depends on where my voice is," he says.

Because the upper range of his voice dissipated after decades of howling "rock 'n' roll" into microphones to kick off his sets and growling like a frisky badger for the rest, Winter started dropping his standard tuning down a whole step to a D about 20 years ago. "Otherwise, I'm pretty much doing the same kind of thing I've done all my life: playing the same kind of music I love—the blues—the same way I always have."

As Winter reflects on his career, it's obvious that Muddy Waters remains his brightest musical beacon. "I played with a lot of people over the years," he says. "Jimi Hendrix. Eric Clapton. But without a doubt, Muddy was the most important for me. I met him for the first time when we opened for him at the Vulcan Gas Company, where all of the psychedelic bands, like the 13th Floor Elevators, played. So the psychedelic sound got into my playing as well. But Muddy was *it*. His name and 'blues' were inseparable to me. And I feel the same way that Muddy felt about the music. When people come to see me I want them to know they're going to hear good blues and that I play what makes me feel good, and that I'm interested in sharing that good feeling with them."

"I use a Dunlop slide that's snug on my finger, so I can fret with the slide and move faster and more exactly," says Winter. He favors open D and G tunings, and sometimes A. "It all depends on where my voice is," he says.



Tips for Replacing a Strat-Style 5-Way Switch

STORY AND PHOTOS BY JOHN LEVAN

A client recently came to my shop with a Strat-style guitar that had a faulty 5-way pickup selector switch. The problem? Its inexpensive stock "box" switch (**Photo 1**) sounded scratchy and was cutting out in the bridge position. Most imported box switches like this are primarily made of plastic and tend to fail when you re-solder wires on them. So a new switch was in order.

I decided to upgrade it with a high-quality CRL 5-way switch (**Photo 2**), a rugged device that's built to last. Other great brands I've used are Oak Grigsby and Switchcraft. Available from such luthier supply outfits as Allparts and Stewart-MacDonald, these products are preferable to the budget box switch.

Soldering tips. Whatever replacement switch you choose, it's important to develop good soldering skills. Following these simple tips will help your solder joints and wiring look professional.

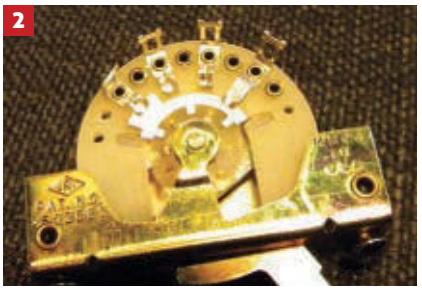
For guitar projects, use a 30- or 40-watt soldering iron with a small, tapered tip to keep your soldered joints clean. It's an effective range, but doesn't get too hot. Anything less than 30 watts will make it painfully slow to heat components for good solder flow.

This is important: *Never use a soldering gun around anything magnetic because its large transformer can degauss the magnets in your pickups. A soldering iron is the right tool.*

I recommend using 60/40 rosin-core solder. Look for .032" diameter solder. It's quite thin, so it melts easily and helps prevent over-soldering. *Never use acid-core solder because it will ruin your electronics.*

A clean tip performs better than a dirty one. After heating your iron, use a brass wire brush, followed by a damp paper towel or sponge to remove any residue. When the tip is clean, coat it with solder (**Photo 3**). Called "tinning" the tip, this process helps the solder melt faster and cleaner. Finally, each time you make a connection, swipe both sides of the tip across the damp towel or sponge to keep it clean.

1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By the way, never blow on a solder joint after you've made a connection. It may be tempting to clear the smoke and hasten the hardening process, but a solder joint must cool and harden on its own. If you blow on it, air pockets can form inside, creating a "cold" solder joint. If the solder joint doesn't look shiny, clean it off and start over.

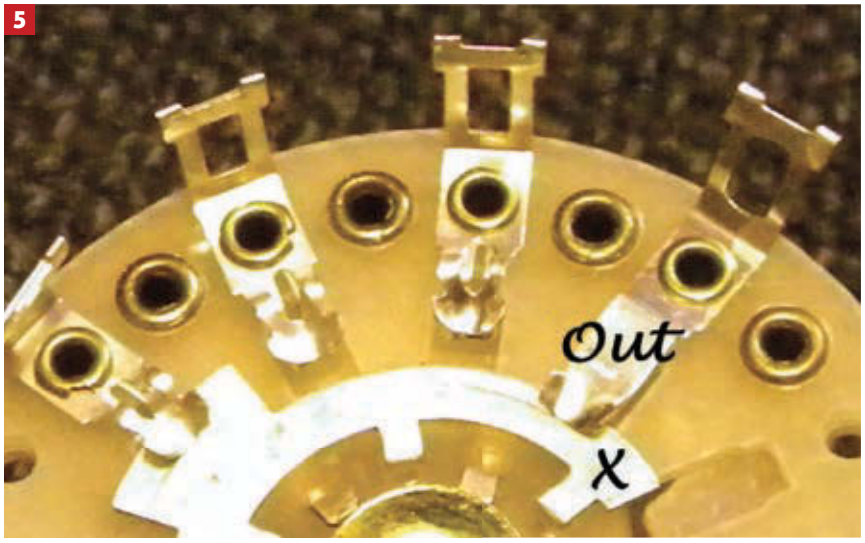
A good pair of hemostats will help you grip the wire and parts you're about to solder without burning your fingers. I use a pair with rubber-coated handles, in case they get hot. It's important to have a pair that locks, so your wires don't slip when you are tinning or soldering them.

For connecting parts inside a guitar, I like to use 22-gauge stranded wire. I prefer the type with a cloth jacket, rather than a plastic jacket, because plastic can peel off when the wire gets hot during soldering and cloth will not. Also, you can easily slide the cloth jacket back on the wire to expose a tip for soldering, which explains why this wire is often called "push-back" wire. Cloth-covered wire is available from the part suppliers I mentioned earlier.

Draw a wiring diagram. There are several ways to wire up a Strat switch, so you need to decide how you want to configure the switch and draw out a corresponding diagram. Unless you're planning a special mod, the big decision is how you want to configure the two tone controls. On vintage Strats and new guitars with traditional wiring, the neck and middle pickups both have dedicated tone controls, while the bridge pickup has no tone control. On most American Standard Strats and many modern Strat-style guitars the neck pickup has its own tone control and the middle and bridge pickups share the second pot (the one closest to the output jack).

This is a personal choice that requires some thought and research. Different players like it different ways, and that's the beauty of a Strat. Fortunately, diagrams for these wirings (and other alternatives) are readily available. Fender and many pickup makers offer free downloadable diagrams, as do the luthier supply outfits. *Premier Guitar*'s master of mods, Dirk Wacker, has many columns devoted to standard and alternative Strat wirings, and they're all available at premierguitar.com. To get started on your journey, read his Mod Garage columns "The Anatomy of the Stratocaster 5-way Switch, Part II" and "Strat Bridge Pickup Tone Control."

If you're replacing a worn switch with an identical new one (and you're happy with your Strat's current tone-control configuration) simply draw a diagram of



5

the old switch and replicate the wiring. But otherwise, do your research before popping open the pickguard and heating up your iron.

Remove the old switch. After removing the strings and carefully unscrewing the pickguard, unsolder each wire on the old switch. Choose a wire, place the tip of your iron on the underside of the switch prong, and let it melt the solder. Using your hemostats, lift the wire out of the prong while the iron is still under it, keeping the solder hot. Repeat this for each wire.

Next remove the switch tip and mounting screws and gently pull the old switch from the pickguard. Now insert the new switch and attach it to the pickguard. I recommend positioning the "spring side" away from the pickups. This gives you a little more room in the cavity to run wires without them getting caught in the spring when you use the switch.

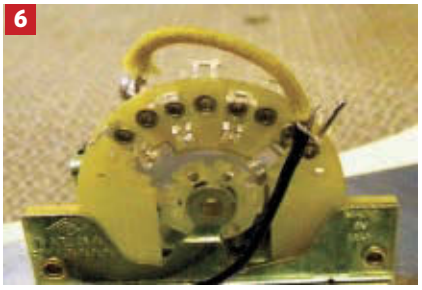
Wire up the new switch. At the risk of being redundant, remember that depending on the type and brand of switch you've selected, the wiring can vary dramatically. So again, take the time to map out the switch and make sure you've done you homework before you solder. I've replaced thousands of switches and learned the hard way that you want to avoid repeatedly re-soldering the wires because you've attached them to the wrong prong.

Once you've crossed the threshold of selecting a wiring and studying the corresponding diagram, the tricky part is done. Now you simply follow your diagram and wire up the switch.

The CRL switch I chose for my project is a double-sided wafer switch (a common design in high-quality switches). This means the prong connections on either side are independent until you wire them together. I typically begin by soldering a jumper wire to connect both sides of the switch (**Photo 4**).

You can see why if you squint at **Photo 5**. The output prong, which is marked "Out" on the photo, makes constant contact with the long, flat connector that's marked with an "X." When the switch is moved, the wider contact section (shown at the far left in this image) slides under a particular prong and makes an electrical connection. Whatever is wired to this given prong is automatically connected to the switch output. The same thing is happening on the other side too, and the jumper links that connection to the output.

The switch's output is wired to the volume pot, as shown in **Photo 6**. (The black wire leads to the volume pot's input lug.) Assuming you're just replacing the switch, the wire leading to the volume pot is already connected. All you're doing is reattaching the volume pot to the new switch's output.



6

So that's the basics of the operation. From here, you'll be soldering the pickup lead wires and tone pots to the switch. Simply follow the schematic that corresponds to the operation you've selected based on your research.

Tin the tip of the wire you're going to connect, then loop the wire onto the appropriate prong. Touch the tinned wire with the soldering iron while gently bringing the solder to the prong. Only use a little solder—a big glob can cause a bad connection or interfere with the mechanics of the switch. When soldering, less is more!

Once you've finished connecting the three pickups and two tone pots, test each switch position by *gently* tapping the pickups with your hemostats as you change positions on the selector switch. You can test the volume and tone controls by rubbing the top of the pickup with your hemostats while turning the knobs.

It may sound like a lot of work, but installing a reliable switch yields years of sonic dividends. Plus you'll get the satisfaction of working on your own guitar—and that can be almost as fun as playing it.

JOHN LEVAN *has written five guitar repair books, all published by Mel Bay. His bestseller, Guitar Care, Setup & Maintenance, is a detailed guide with a forward by Bob Taylor. LeVan welcomes questions about his PG column or books. Drop an email to guitarservices@aol.com.*

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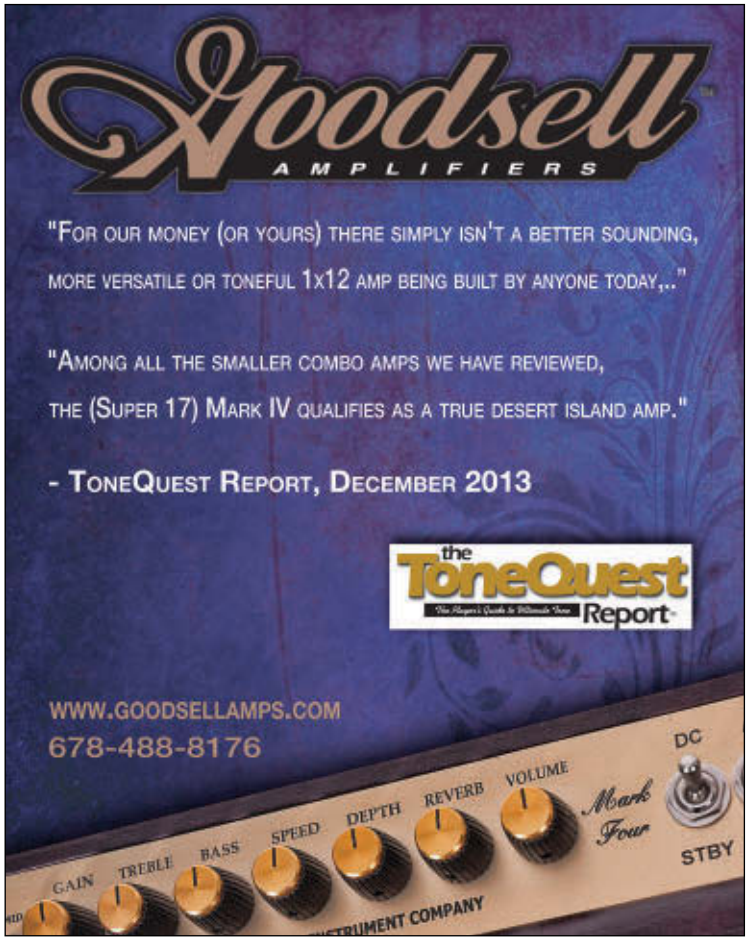
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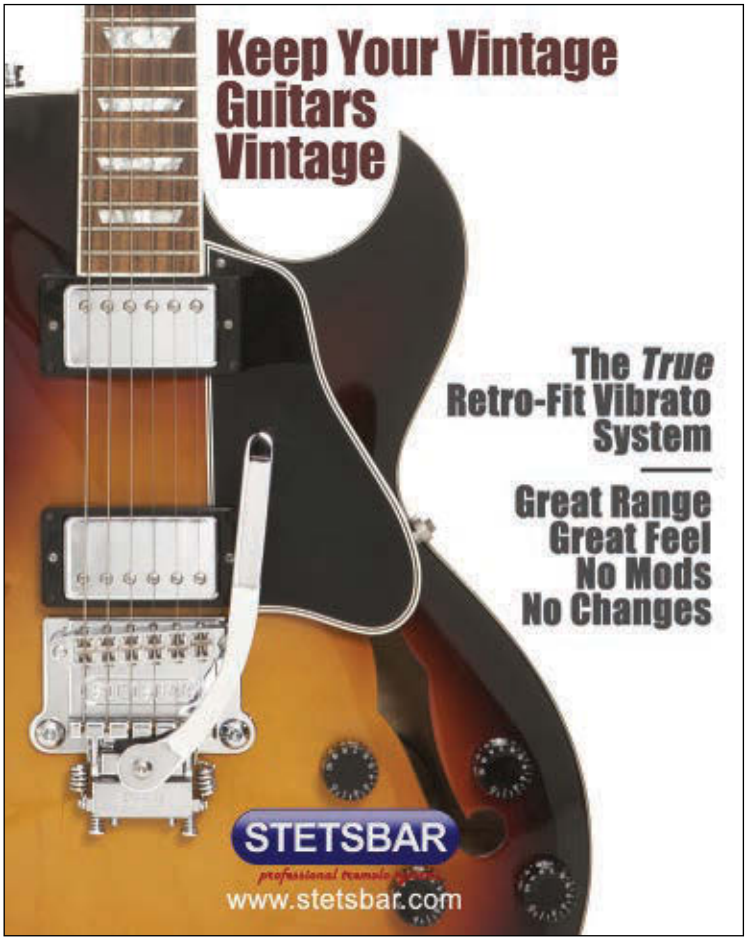
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STRING CHEESE INCIDENT

MILE-HIGH MELTING POT

Photo by Spady Photography

THE COLORADO SEXTET PERFECT THEIR MULTI-GENRE APPROACH WITH A NEW ALBUM PRODUCED BY A TALKING HEAD.

BY JASON SHADRICK

There are certain geographic regions that just drip with an undeniable musical identity. The sound of James Jamerson's groove on the Detroit Motown sides, or the tight-but-loose country-rock stylings that blossomed out of Alabama's Muscle Shoals have defined those regions as much as anything else. For nearly 20 years, the String Cheese Incident has created an incredibly intense, but powerfully distinctive sound surrounded by the picturesque Rocky Mountains. The Boulder-based collective chews up and spits out everything from EDM and dubstep to bluegrass and Americana with staggering authenticity.

That natural process of collecting, absorbing, and interpreting various influences has turned what began as a forward-thinking progressive acoustic quartet into a muscular and dynamic sextet that could easily go from Coltrane's "Impressions" to Nelly's "Hot In Herre" without blinking an eye. "If you listened to a tape of what we sounded like then and what we sound like now, there would be some head-scratching," says frontman Bill Nershi.

The wonderment would be a result of *Song in My Head*, the group's first studio album in nearly a decade. Even after a cursory listen, you can tell that the Cheese has moved well past the Grisman Quintet sound of their early years. On "Rosie," the band proves they can flip on the electronica switch and create a beat-filled dance jam that isn't any less danceable just because it's played by a group of self-described ski bums from the mountains. Other tracks touch on everything from Fela-inspired Afropop ("Betray the Dark") to raise-the-roof gospel ("So Far From Home").

Admittedly, studio albums aren't the lifeblood of most bands in the jam scene. It's all about the show, or what the Cheese calls an "incident"—that wild and unpredictable place where preparation meets exploration and you never quite know what's going to happen. Psychedelic light shows, themed costume parties, and general musical silliness have served as the cornerstones of many incidents over the years.

We caught up with Nershi and mandolinist Michael Kang as they prepared to hit the summer festival circuit to discuss African rhythms, why they will never be an electronica band, and the good and bad parts about working with a producer.

Above: At any given "incident," Bill Nershi (left) and Michael Kang (right) might find themselves in a deep house trance beat or playing Grisman-style bluegrass.

Drummer Michael Travis adds some percussive elements to Nershi's solo on his signature Santa Cruz model acoustic.

This is your first studio album in a decade. At what point did you decide as a band that now was the right time to record?

Bill Nershi: I've been trying to get the band to do it for probably the last four years. There's always the question of "Okay, we'll make a CD and then what good will *that* be?" For me, it was more like we have this backlog of material and we need to record some of these songs and get them down, and if we don't go platinum, it's okay. We still documented where we're at as a band.

Michael Kang: We took a break in 2006 and got off the road and everyone retreated into their own lives a little bit more without having to be involved in the group dynamic as much. Since we came back, we've played a lot fewer gigs. We've always recognized that we have a ton of music we haven't recorded—probably more than what actually ends up on our albums. But, as a live band, we have always found it important to play shows. I think getting back in the studio was important. Originally, we thought we would use the multitracks from live shows as basic tracks for the album and then do overdubs. Once we started sifting through that we realized that we might as well just go for it in the studio—and we were rehearsing in the studio at the time as well. It was pretty painless and everybody had an enjoyable time in the studio, which hasn't always been the case for us. Sometimes it can be a little like pulling teeth for different members.

When a song changes shape, both on the road and in the studio, do you aim to make a definitive version when you put it on an album?

Kang: I think in the studio you have the opportunity to hone in some of the finer elements, especially vocals and the sonic texture and balance of all the instruments. It's really difficult, I think, for anyone to mix us live and really nail it since there's so much stuff going on onstage. Our last sound guy had over 75 inputs. It's really nice to go to the studio and make it sound exactly what you want it to sound like. That often informs how it comes out in the live show as well. A lot of these songs have been fine-tuned on the road already.

Nershi: Sometimes songs can be ruined by producers who want to record them a certain way that's different from what the writer, or even the whole band, has been playing or wants to play. You end up in this limbo between the version that some people have in their minds as the way to play it and the recorded version, and you can never settle down and just play the song the way you want to because you're split on it. I feel like two things happened during this recording process kept that from being the case.

First, we were in the studio already and recorded all these basic tracks without a producer. So we played them the only way we knew how to play them. It was very simple and production didn't hold us up. That made it easy and very low stress for us. The other thing was that I really felt like Jerry Harrison, as a successful musician in his own right, had a good feel for what we wanted as a band for the album and for the songs. He had a respect for not messing with the tunes for the sake of being the producer. We ended up with versions of these songs that can be a template for us when we play them live. One thing he did that was really helpful on a couple of the tunes was changing the keys so the vocalist was in a better place to be able to give the song a bit more punch. He didn't just pry into the songs. He had a sense of how to get the best out of each song without having to take it apart.

Speaking of Jerry, how did that connection come together?

Kang: Jerry is a good friend of a songwriting buddy of ours named John Perry Barlow. We were playing at the Greek Theater and John called us up and said he was going to come to the show and bring his friend Jerry. Interestingly enough, we were actually downstairs trying to figure out what we were going to play—without even knowing that he was going to be there—and we decided on the Talking Heads' "Life During Wartime." All of a sudden it became

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Mandolinist Michael Kang rocks a custom Ron Oates baritone 5-string mandolin armed with a Roland syth pickup and a pair of Lindy Fralin humbuckers.

apparent that he was going to come down. So he sat in and jammed with us. About 10 years ago, he was on a list of possible producers for a previous album, but it didn't work out. At that gig we weren't even really thinking about an album, but we knew he was still producing. When we decided we wanted to bring in a producer who could help us finish this, he was tops on the list and everyone really wanted to work with him. He's super relaxed about the whole thing, which really helps.

String Cheese operates without a traditional lead guitarist. Michael, you seem to fill that role a bit with your electric mandolin.

Kang: I play some electric guitar on the album, but mostly my Ron Oates electric 5-string mandolin. With an 8-string, there's a very specific sound. First of all, it isn't electric, so your limited to the tonality you can get. Plus, it's a pretty high-pitched instrument. Early on, I decided I wanted to make more electric guitar-like tones, so I got a 5-string mandolin that had a low C. Eventually, I took it to the 5-string octave mandolin tuned to G-D-A-E-B. Which is a third above the lowest note on the guitar. Ever since then, it's become my go-to instrument. I like the traditional mandolin, but I feel they can be limiting. I just don't really play that much acoustic in this band, it doesn't always find a place in our settings.

Bill, tell me about your T-style electric that you occasionally use.

Nershi: My brother Tom built that for me. He built me that Tele and a couple of lap steels I play from time to time. He's a craftsman of sorts and a musician, so he's built a few guitars. He doesn't make a living doing it, just when he has time and is motivated.

What acoustics did you use on the album?

Nershi: I played a bunch. Different guitars will fit sonically better than others. I have an old "FrankenMartin" D-28 that has gone through many

YOUTUBE IT

The group revisits the up-tempo bluegrass that fueled their early days with the opener from their latest album.
YouTube search term: String Cheese Incident - Colorado Bluebird Sky - Aragon - 12/9/2011

The band takes ride on one of their funkier tunes, "Miss Brown's Teahouse," during the Rothbury Festival—one of only two gigs they played in 2009.
YouTube search term: String Cheese Incident- Miss Brown's Teahouse (HD) 7/3/2009

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transformations. I played that on some tunes. I just got a 1955 Martin D-18 that I played. I also had a Santa Cruz D-Nershi guitar on some stuff.

Tell me more about the "FrankenMartin."

Nershi: It was a '70s Martin that wasn't built well. They had a period of time where they were putting out some odd guitars as far as where the bridge and saddles were placed. I've had a new bridge and new saddle installed. I brought it to Costa Rica and the neck bowed and just never went back. My luthier here in Boulder, Jon Eaton, told me it was time to cash it in and get a new guitar. By the time I had stopped crying, he told me he had some necks in the back room. He went back and brought out a selection of Martin necks. We picked one out and he replaced it. It's had a tough life. I've played it hard for many years. [*Laughs*].

Michael, what's on your pedalboard?

Kang: It hasn't changed much over the last seven or eight years. The newest thing is that I go into a device made by Brad Sarno called a Steel Guitar Black Box. It's basically an impedance matcher. Scott Walker, who is making me some custom mandolins right now, turned me onto it. I go directly into that and then it goes into the pedalboard, which is pretty standard. I have several Keeley pedals, a Maxon compressor, a Keeley-modded Tube Screamer, a Fulltone Full-Drive 2, a Line 6 DL4, and an old DigiTech Whammy Wah. I have a Voodoo Lab Ground Control that controls it all.

Basically, the core of my thing is the Two-Rock Custom Reverb I got about six years ago. I run that as a center channel through a 2x12 Bogner cabinet. I run stereo effects with a TC Electronic G-Force for a lot of tremolo, delay, or special effects-type stuff. Then I just have a couple single 12" cabs that run in

BILL NERSHI'S GEAR

GUITARS

Collings I-35
Santa Cruz D-Nershi Signature Model
'70s Martin D-28 ("FrankenMartin")
1955 Martin D-18
Ton Nershi T-Style Guitar

AMPS

Fender Blues Deluxe
Fender Blues DeVille

EFFECTS

Fulltone OCD
Fulltone Fat-Boost
Ernie Ball Volume Pedal
Boss TU-2 Chromatic Tuner
Fulltone Full-Drive 2
Pro Co RAT
Maxon Rotary Phaser
Dunlop Crybaby Wah
Line 6 Echo Park
TC Electronic G-Force

STRINGS, PICKS & ACCESSORIES

D'Addario EX115 (.010-.049)
Rocktron MIDI Mate
Whirlwind Selector A/B
Sunrise acoustic pickup
K&K Pure Classic acoustic pickup
Avalon U5

MICHAEL KANG'S GEAR

MANDOLINS

Ron Oates Custom 5-string
Octave Mandolin
Walker Electric 5-string Octave Mandolin

AMPS & CABS

Two-Rock Custom Reverb
Groove Tubes D75 Power Amp
Bogner 2x12 cab

EFFECTS

DigiTech XP100 Whammy Wah
Electro-Harmonix Micro Metal Muff
Electro-Harmonix Micro POG
Electro-Harmonix Micro Synth
Electro-Harmonix Q-Tron
Line 6 DL4
Keeley Phaser
Fulltone Full-Drive 2
Keeley-modded Ibanez TS808
Tube Screamer
Keeley Katana Clean Boost
Boss TU-2 Chromatic Tuner
Maxon Compressor
Ernie Ball Volume Pedal
Roland GR-33 Guitar Synth
TC Electronic G-Force
Sarno Music Solutions
Steel Guitar Black Box

STRINGS, PICKS & ACCESSORIES

Elixir strings
Fender Extra Heavy picks
Voodoo Lab Ground Control
Voodoo Lab Pedal Power 2+

stereo through a slave Groove Tubes D75 power amplifier. That's pretty much the rig I've had for the last 10 years.

Bill, describe your acoustic rig.

Nershi: With my acoustic guitar it's nice to have a stereo sound. I have two pickups in my acoustic. It's a little complicated. I have the Sunrise magnetic pickup in the soundhole and the K&K pickups underneath the bridge because it's nice to get a little bit of the wood sound out there. I need the presence of the magnetic pickup with the volume of the music that's being played. I run through a couple of Avalon DIs with a stereo cable coming out of my guitar and one side runs to each DI. I can adjust the balance there and then I sum them into the back of my TC Electronic G-Force for my stereo effects.

Do you use any amps live?

Nershi: I don't run through an amp with my acoustic for my in-house sound. I've got a couple of AERs that I use just for stage monitors. For my electrics, since the two guitars have such different gain structures, I run them into different amps. The Collings goes into a Fender tweed Blues DeVille, one of the older 2x12 combos. I run my Tele into a smaller, 40-watt Fender Blues Deluxe.

"Let's Go Outside" has a groove that wouldn't be out of place at an EDM festival. When did the electronic influence creep in?

Kang: Over the years as we started playing these different festivals, maybe up to 10 years ago, we noticed more of the electronic element entering into the jam scene. On *Untying the Knot*, a producer who had produced a lot of electronic stuff took one of our fiddle tunes in that direction. It ended up being a trance tune with a four-on-the-floor house beat.

We didn't really start adding beats in the band until Jason [Hann, percussionist] brought his computer onstage. Jason and Michael [Travis, drummer] have an electronic duo called EOTO where they just play live electronica. They definitely brought that into the group. Before then, there were songs that had that trance-like vibe but didn't have the electronic beats. We just add it in spots and it's another point that the kids are able to relate to. You know, we are all in our 40s and 50s and when we go to play a festival, the kids are like 18 or younger. We've always prided ourselves, to a certain degree, on taking people on a genre-bending experience when they see us live. Even from the early days, it's been like that. I think that is just an extension of it. We will never be just an electronic band, that's not going to be our thing. But it's nice to have it in the arsenal.

I imagine with so many songwriters and influences in the band, the journey from idea to finished song can take a number of different paths.

Nershi: Yeah, it can be anything from a chord progression or a riff, to a verse and a chorus, to a completed demo that someone will construct in their computer. Depending on the level of completion of the song, it can either be played in its entirety as it's written or it might be an idea that is brought into a rehearsal session and as a band we will arrange or even write lyrics or parts to it. There's no rule of thumb. Generally, the band arranges almost all the songs, or they at least add ideas and parts to it. It's rare that there's a song written in stone and everybody is handed their part.

Which song on this album changed the most between inception and the final recorded version?

Nershi: "So Far From Home" ended up being a real fast gospel tune. It changed the day we recorded it. We had played it almost like an Allman Brothers-type thing. We realized it would be great if the Allman Brothers were playing it like that, but I said, "Let's just play it double-time." It changed on the spot the day it was tracked. It was hard when you have this idea of a song sounding like another band. It can be pretty limiting and frustrating, because of course, that's a different band that sounds great. But you have to do your own thing and make songs your own—even your originals. When we did that and took it completely out of the vein we were working in, it was exciting and fresh for everybody.

Kang: I think we played it a few times at the slower tempo. Then once you suggested stepping on the pedal we were all like, "Whoa. That was fun." [*Laughs*].

Covering Your Basses, Pt. 2

BY VICTOR BRODÉN

In my previous column ["Covering Your Basses," May 2014], I talked about the importance of being stylistically well-versed and argued the artistic validity of being a jack-of-all-trades and master of none. Owning just one Jazz- or Precision-style passive bass with two pickups, two volume controls, and a tone control will let you play almost all popular styles, *without* having to change amps or pedals like a guitarist might.

The following tips are simply suggestions and primarily apply to recording, even though you will also get good results using these settings and techniques onstage with an amp set fairly flat. One bass and a world of musical styles are literally at your fingertips, and this will let you be a *several*-trick pony!

Reggae

The first order of business here is to set the rear pickup's volume control to zero. Second, move your plucking hand to a position close to the neck, wherever you feel most comfortable. Many reggae players even put their thumb on top of the neck. To generate the sub lows needed for reggae, dial the tone control all the way off. In addition to the obvious results of taking most upper-mid and treble frequencies out of your bass, it will also remove some low-mid punch that we so love in other styles, but that isn't necessarily desirable for reggae songs. You can achieve this slow attack and very round sound with a newer set of strings, but an older set that sounds slightly dead is preferable.

Fingerstyle Funk

To attain the staccato attack and midrange definition that are both requirements for this style, you need to rely on your bridge pickup. It will give you the gnarly, well-defined punch that you know from legends like Rocco Prestia and Jaco Pastorius. Personally, I never *fully* solo the rear pickup. The lack of low end when only using the bridge pickup on a Fender-style bass is too apparent to me, so instead I roll back the neck pickup's volume to about 40 or 50 percent while keeping the bridge volume dimed.

Depending on what amp or DI you are using, this specific setting might still sound a little bright, but it can be easily remedied by turning down the tone knob. I like to roll it down about halfway when going for this tone. The most important thing from a playing perspective is that you pluck the strings close to the bridge. Anchoring your thumb on top of the bridge pickup works wonders (see photo at right). This setting is very usable for fusion, smooth jazz, emulating fretless-bass sounds, and bringing out harmonics when performing a bass solo.

Rock

To replicate the fat and warm classic-rock tones of the '70s, I dime the front pickup, set the tone to about 50 percent, and use the bridge pickup at less-than-half volume or not at all. That's because I like to keep bright, fresh strings on most of my basses and most of the rock tones from that era borrow stylistic cues from the very warm, round R&B tones of the '60s. If your strings are almost dead, however, leave the tone control wide open for that throwback sound. I rest my thumb on top of the neck pickup, though other guys using this technique frequently play slightly in front of the neck pickup. A word of caution: This tone can get muddy if you are playing in a two-guitar band where the guitarists are using closed-back cabinets or have a lot of volume.

For great rock tones using a pick, there are a few options. To get a lot of definition or "click" from your pick, leave both pickups on and your tone control wide open, and place your palm on top of—or near—the bridge like a guitarist would. Instead of hitting the string in a sideways motion with the pick on top of the string, make sure you play in a straight-up-and-down motion (floor to ceiling) while getting the pick almost *under* the string until the pick itself bends. This technique will cut through those potentially loud, muddy guitars mentioned earlier.

The perfect midrangey fingerstyle tone requires full volume on the bridge pickup and a playing position close to the bridge.

For a slightly looser or *sloppy* feeling rock-pick approach, keep the tone knob wide open, solo the neck pickup, and strike the strings with a pick directly above the pickup, or slightly in front of it. A lot of punk- and modern-rock tracks feature this tone and it will probably sound very familiar to you, especially on a bass with a maple neck. This tone requires fresh strings and more of a strumming approach as you hit the string.

Most of your favorite albums were likely made with a P- or J-style bass without much else than a DI or a basic amp. Getting to know all the possibilities that live inside your instrument itself will make all other bass gear icing on the cake, rather than a necessity. Go explore! The tone is in your hands.

VICTOR BRODÉN *is a Nashville bassist and producer who has toured and recorded with more than 25 major-label artists, including LeAnn Rimes, Richard Marx, Casting Crowns, and Randy Houser. You can reach him at vbroden@yahoo.com.*

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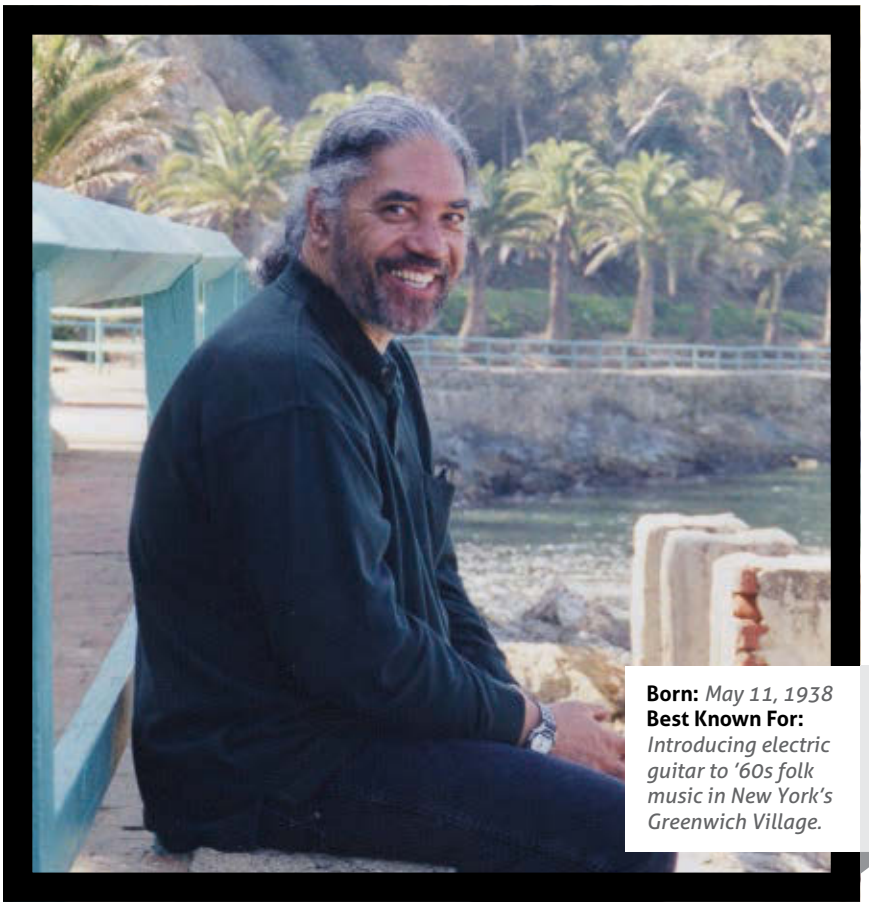
BRUCE LANGHORNE

You may not know his name, but "Mr. Tambourine Man" helped pioneer '60s folk-rock with his amplified Martin flattop.

BY MICHAEL ROSS

You may well be asking, "Bruce who?" That's why Bruce Langhorne qualifies for the "forgotten" part of Forgotten Heroes. But talk to Bill Frisell, Steve Earle, or Jonathan Demme—or just read on—to understand why the guy is a guitar hero. His best-known claim to fame is his fretwork on a couple of early Bob Dylan records, but Langhorne's importance goes beyond that. His sensitive, call-and-response accompaniment on seminal records by Joan Baez, Odetta, and Richard and Mimi Fariña contributed heavily to the lexicon of licks used by sidemen ever since. Moreover, his decision to place a pickup on his Martin acoustic and plug in to a Fender Twin helped herald the transition from folk to folk-rock and change the face of popular music forever.



Born: *May 11, 1938*
Best Known For: *Introducing electric guitar to '60s folk music in New York's Greenwich Village.*

Photo courtesy of Bruce Langhorne Archives

Early Days

Bruce Langhorne was born in Tallahassee, Florida, in 1938. His father was head of English at the Florida Agriculture and Mechanical College for Negroes. His parents split when he was four, and his mother raised him in Spanish Harlem, where she was in charge of the Harlem library system. She played piano until a young Bruce took it apart to see how it worked.

Both parents were light-skinned African-Americans, and young Langhorne got into fights for looking too white, too black, or too Puerto Rican. He attended the prestigious Horace Mann Prep School in New York until he was expelled. He has claimed that he was in gangs and stabbed someone as a teenager, requiring him to escape to Mexico for two years.

At 12 he was a budding violin prodigy, but a concert hall career was not to be. When Langhorne lit the fuse on a homemade rocket, he hadn't calculated how fast the powdered magnesium propellant would burn, and the rocket exploded. His mother raced to Bruce's room to discover that her son had blown off a significant portion of his right hand. Apparently his first words were, "Well, at least I won't have to play that stupid violin any more."

Langhorne didn't start playing guitar until he was 17, when he performed alongside a caricaturist in Provincetown, Massachusetts, who would sketch those who stopped to listen. Having lost most of his right hand's thumb, index, and middle fingers, he basically picked the strings with two fingers and the nub of a third. "I had to rely on communication and empathy," he said. "Which is why I really liked working with Bob Dylan."

HEAD ONLINE
to read Langhorne Testimonials from his fellow musicians.

Top right: Langhorne managed to play beautifully despite the fact that he'd lost much of his right hand in an explosion.

Middle right: Langhorne first recorded with Bob Dylan while accompanying singer Carolyn Hester in 1961. "If you had Bruce playing with you," Dylan wrote in his 2004 autobiography *Chronicles*, "that's all you would need to do just about anything."

Bottom right: A personal note from Dylan to Langhorne.

The Seeds of Folk-Rock

It was in the burgeoning Greenwich Village folk scene that he eventually met the songwriting legend. Langhorne began as an accompanist to folksinger Brother John Sellers, then working as an emcee at the original Gerde's Folk City on Mercer Street. That gig allowed Langhorne to sit in with numerous Village musicians and eventually led to work as a live accompanist and in the studio.

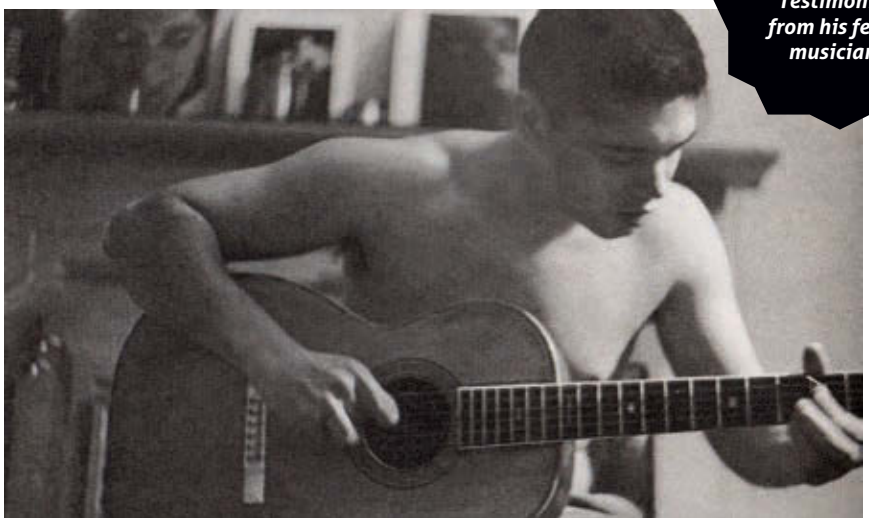
An early recording session was for Carolyn Hester's first Columbia album in 1961. According to David Hajdu's book *Positively 4th Street: The Lives and Times of Joan Baez, Bob Dylan, Mimi Baez Fariña, and Richard Fariña*, Hester and her producer decided to add a second guitarist and chose Langhorne, who had become a "one-man house band" at Folk City. That session also saw a pre-fame Bob Dylan on harmonica. Other sessions included dates for the Clancy Brothers and Chad Mitchell Trio.

Langhorne's first impression of Dylan was less than stellar. "I thought he was a terrible singer and a complete fake, and I thought he didn't play harmonica that well," he says in Hajdu's book. "I didn't really start to appreciate Bobby as something unique until he started writing."

Dylan's masterful writing was in full force on 1963's *The Freewheelin' Bob Dylan*, but the only tune featuring Langhorne's playing is a cover of the traditional "Corrina, Corrina." Around the same time he contributed electric guitar (though mixed so far in the background it sounds acoustic) to an obscure Dylan single, "Mixed Up Confusion," which was barely distributed.

The year 1963 found America in turmoil: John Kennedy would be assassinated in November, only months after Martin Luther King gave his "I Have a Dream" speech at a 300,000-person March on Washington for civil rights. Bruce Langhorne was also at that podium, accompanying African-American folksinger Odetta.

Langhorne's playing skills were very much in demand by 1965. He appeared on records by Odetta and Joan Baez, and commenced a working relationship



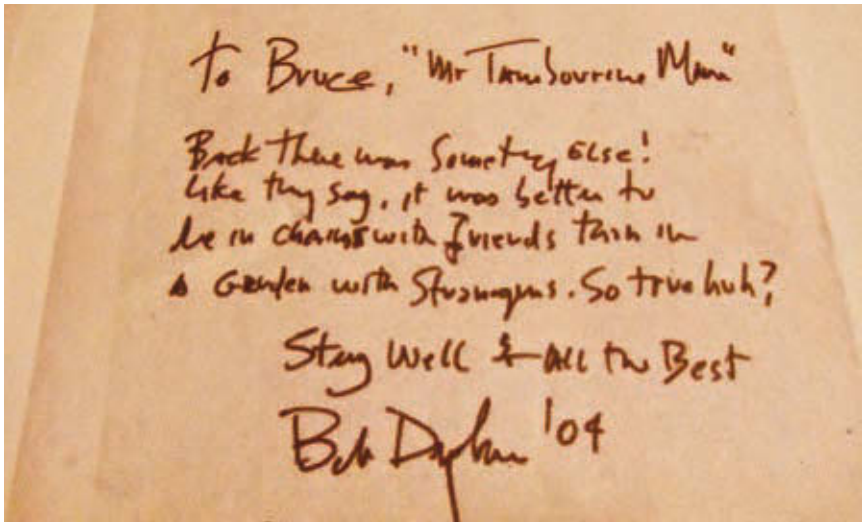


Photo courtesy of Bruce Langhorne Archives

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Top right: Langhorne accompanied singer Odetta at Martin Luther King's March on Washington on August 28th, 1963.

Bottom right: According to Bob Dylan, Langhorne and his oversized tambourine inspired the name "Mr. Tambourine Man."

with Baez's sister Mimi and her husband Richard Fariña. Mimi Fariña played guitar, while Richard displayed dulcimer in a unique, rhythmic strumming style. Langhorne added acoustic and electric guitar, as well as percussion. He developed a close relationship with Richard, as Fariña's Cuban heritage also made him one of the few non-Caucasians in the largely white folk scene. And they were fellow hell-raisers, shooting at mailboxes while driving upstate in Langhorne's car.

Langhorne had great respect for Mimi's guitar playing. When he found two stellar, 12-fret, V-neck Martins in his guitar-buying travels, he bought one for Mimi.

Though Dylan's *Bringing It All Back Home* is rightly credited with heralding the beginning of the folk-rock era, Richard and Mimi Fariña were moving in that direction at the same time, and Bruce Langhorne helped create the new sound for both parties. Langhorne's stabbing electric blues licks on "Reno Nevada," from the Fariña's *Celebrations for a Grey Day* record lift it well out of the folk tradition. In fact, label head Seymour Solomon deemed the solo such "abrasive noise" that he almost refused to release it. It sounds tame today, but in the context of the day it might as well have been Captain Beefheart.

Langhorne was one of several guitarists on *Bringing It All Back Home.* Others included session guitarist Al Gorgoni and Kenny Rankin, who would go on to be a successful artist in his own right. Much of the record was cut in one day. "There were a whole bunch of studio cats, and we were unrehearsed," Langhorne related in Hajdu's book. "No lead sheets. Everyone would just start playin'. I don't even remember Bob runnin' though the songs once." In a 2007 interview he recalled: "The connection I had with Bobby was telepathic, and when I use that word, I mean it. Between the two of us, that level of communication was always very strong. I played on every song on *Bringing It All Back Home*. Some of those numbers were barely rehearsed. Some were done in one or two takes."

One song on the record was "Mr. Tambourine Man," later a pop hit for the Byrds. On the record's track notes Dylan reveals the origin of the tune. "'Mr. Tambourine Man,' I think, was inspired by Bruce Langhorne," he says. "Bruce was playing guitar with me on a bunch of the early records. On one session, [producer] Tom Wilson had asked him to play tambourine. And he had this gigantic tambourine. It was like, really big. It was as big as a wagon-wheel. He was playing, and this vision of him playing this tambourine just stuck in my mind. He was one of those characters ... he was like that. I don't know if I've ever told him that."

Photo courtesy of Bruce Langhorne Archives

Dylan went on to employ Michael Bloomfield and Robbie Robertson as guitarists, and Langhorne would not work with him again until the movie soundtrack for *Pat Garrett & Billy the Kid* in 1973.

By the time he was interviewed for the Martin Scorsese film *No Direction Home: Bob Dylan,* Langhorne had revised his initial impression of Dylan: "I remember he was different. He was doing Woody Guthrie songs. He had on a little hat, he had a [harmonica] brace. There's a quality of determination and of will that some people have, that when they are doing something they are really doing it and you know that you have to pay attention to them."

Studio Success

The remainder of the '60s and early '70s would see Langhorne playing on and producing records for a Who's Who of the burgeoning folk-rock world—what we would now call Americana. The list includes Buffy Sainte-Marie, Eric Andersen, Ramblin' Jack Elliott, John Sebastian, Richie Havens, and Tom Rush. As former folkies scrambled to embrace the sound Dylan and the Fariñas had pioneered, Langhorne became the go-to guy. Artists outside the folk world, such as Hugh Masekela and Hoyt Axton, also recognized his talent.

In the early '60s Langhorne married his first wife, Georgia, an African-American ballet dancer, but the marriage

lasted only 18 months. By 1969, he was living with his long-term girlfriend, Natalie Mucyn, when he was approached by actor/director Peter Fonda. Fresh off his success in *Easy Rider,* the actor was allowed an unusual degree of editorial control for his 1971 directorial debut, *The Hired Hand.* He commissioned Langhorne to compose a soundtrack based on his facility with traditional American instruments like guitar and fiddle. Langhorne worked with film editor Frank Mazzola, who has affirmed the music's resemblance to later film scores by Ry Cooder. "The work Bruce produced was years ahead of its time and yet remains unique," said Mazzola. In a 2007 interview, Fonda recalled the studio's initial opposition to his choice of composer. "I reminded them that, in the world of music, the word 'virtuoso' still means something," he said.

Another soundtrack for a little-known Fonda movie, *Idaho Transfer,* followed, but it was acclaim for *The Hired Hand* that brought Jonathan Demme calling. It was the beginning of a working relationship that would include such Demme movies as *Fighting Mad* and *Melvin and Howard.*

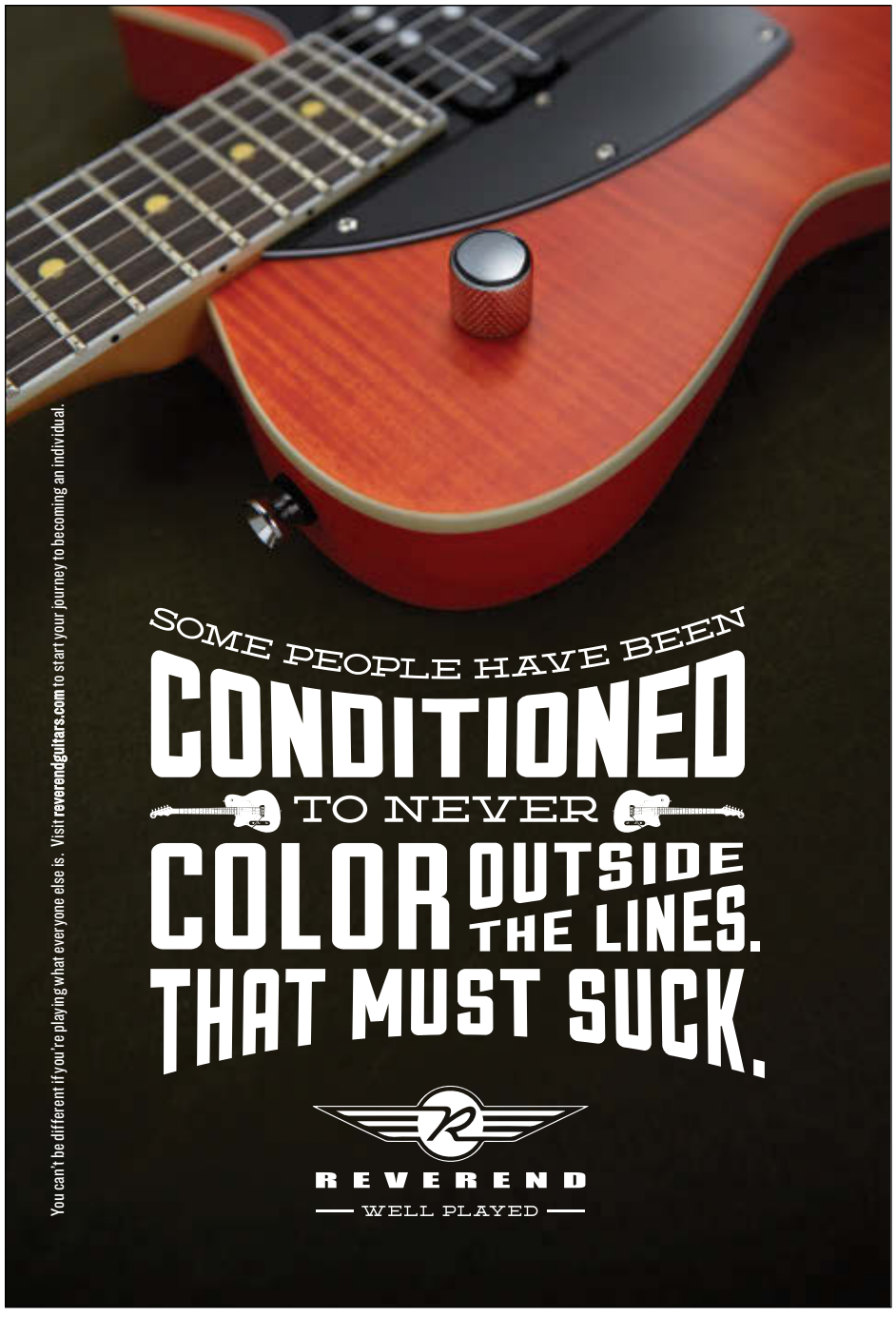
In 1976 Langhorne did the *Stay Hungry* soundtrack with fiddle player Byron Berline for director Bob Rafelson. Starting in 1977 he partnered with Morgan Cavett in a recording studio called Blue Dolphin. Cavett had worked with Steppenwolf, produced records, and discovered The Captain & Tennille. It was in this studio that some of Langhorne's soundtracks were realized.

Moving On

A third collaboration with Demme was planned, but never realized. "Bruce had done a magnificent score for a film of mine called *Swing Shift*," Demme is quoted as saying. "Langhorne wrote original live music in the style of 1940s big bands and 1940s jazz, and fused it into the dramatic score that he had written. Had I not been fired, had *Swing Shift* not been re-edited, had Bruce's score not been trashed, he would undoubtedly have gotten a fucking Oscar nomination for his extraordinary work on that movie. To experience the horror of seeing work of that quality thrown into the trash by Warner Brothers ... I have always suspected that it was on the heels of this that Bruce chucked it in and moved to Hawaii."

There were other factors in Langhorne's relocation. "I was no good at Hollywood studio politics," he said. "And I didn't enjoy the parties." Also, perhaps encouraged by his indulgence in substances freely circulating at the time, the guitarist had become fascinated by the trance effect of prolonged percussion playing. In 1980, Langhorne left Los Angeles for a cane shack in Hawaii and began a career as a macadamia nut farmer. The nut farm proved more work than Langhorne anticipated, and he returned to Los Angeles in 1985, settling into a house in Venice Beach and playing with a wide range of musicians, including the late Nigerian percussion master Babatunde Olatunji.

In 1992 Langhorne was diagnosed with Type 2 diabetes. This led to a new career as developer and purveyor of Brother Bru-Bru's Hot Sauce. At 8,400 Scoville heat units, Brother



THE GUITAR

"I had this old Martin that I played on everybody's sessions, because it was just such a wonderful-sounding instrument" —Bruce Langhorne.

That old Martin and its original case are now in the possession of Maple Byrne, guitar collector, historian, and tech to Emmylou Harris and Buddy Miller. Byrne reverently calls himself the custodian of the instrument, which he bought through Heritage Auctions after it was on display at Paul Allen's EMP Museum.

"It is a 1920 Martin 1-21," says Byrne. "Size 1 would have been the standard guitar size in the 1890s. A 21 has slightly less ornamentation than a 28. The "2" in 21 means rosewood back and sides—very rare for that year. This size was prevalent in the 1890s, but you couldn't put steel strings on those. They are X-braced after about 1908, but even then were not braced for steel strings; people used silk and steel strings on those. By 1920 they didn't make many guitars this small, but the ones they did build had modern bracing."

The modern bracing holds firm under light-gauge flatwound strings like those Langhorne used throughout his career. The flatwounds may have been easier to manipulate with the nubs of his lost fingers, and definitely contributed to the dark tone that is part of what makes him distinguishable on record, even on those with two or more guitarists.

Jeff Slatnick has worked at Music Inn in Greenwich Village since the '60s and speculates that Langhorne bought the guitar there. "Bruce used to come in a lot," he recalls. "He most likely got the guitar here, since we were the only guitar store in the Village at the time."

"For a collector, I mean serious guitar nerds like Maple and myself, this piece has it all," says Steve Earle, "First, it's a size 1 Martin: the modelfrom which all American flattop guitars are descended. And this particular one belonged to arguably the best guitarist living and working in Greenwich Village at the height of the folk boom."

Photos by Michael Ross

Bru-Bru's is a little more than twice the strength of Tabasco. Made primarily from expensive habanero peppers (most producers use the cheaper jalapeños), it is manufactured in the U.S. The sauce is largely sold in small health stores because, inspired by Langhorne's illness, Bru-Bru's has no salt, sugar, gluten, artificial coloring, or preservatives.

Langhorne continued to do soundtrack work into the '90s, largely employing keyboards. ("Just another tool to make music," he noted.) In 2003 he formed the Venice Beach Marching Society, a tribute to the music of New Orleans that parades down the Venice boardwalk every Saturday with a cart of amplifiers and a drum.

As his illnesses progressed (including a 2006 stroke), Langhorne gave up guitar altogether. "I figured I had done what I was supposed to do on guitar," he said. "If I never did anything else on the planet, the things

LANGHORNE LICKS

Lacking the full compliment of fingers to play typical guitar, Bruce Langhorne had to develop his own technique. His early influences were R&B, and the first record that caught his attention was Ruth Brown's "Mama, He Treats Your Daughter Mean." He was also into Wilson Pickett and the great jump-blues saxophonist Louis Jordan.

Langhorne also found inspiration in classical music, particularly in how composers create polyphony by weaving together separate voices and individual lines. In the studio he'd listen to the song and the other players, and then figure out a part with three voices—a number he could control with his injured right hand. In an interview with Richie Unterberger he explained, "I needed someone who had a thread going to really do my job, because then they could generate a couple of lines of polyphony or a rhythmic structure, and I could enhance that. I got to be a very good accompanist for that reason. I was really forced to listen and that's essential for an accompanist."

On *The Freewheelin' Bob Dylan* Langhorne added an additional acoustic guitar part to the traditional tune "Corrina, Corrina." His sliding sixths on that track help establish Langhorne as a distinctive guitar voice in the folk era. These licks instantly became part of the accompanist lexicon. They appear again on "She Belongs to Me." The same record displayed Langhorne's ability to weave a countermelody around a vocal on "Mr. Tambourine Man," the tune he inspired, and in a lower register on "It's All Over Now Baby Blue."

His out-front acoustic work on *Odetta Sings Dylan*, also recorded in 1965, offers a deeper look at his emblematic style and creativity. Langhorne's intense, insistent hammering-on of notes throughout "Master of War" are mixed way up, making him an equal partner in interpreting this dark masterpiece. On "The Times They Are A-Changin'" he demonstrates his knack for weaving countermelodies to the vocal line, along with surprising note choices and two-note pedal tones that build almost unbearable tension. Though soulfully jazzy, Odetta's version of "Mr. Tambourine Man" would have lived in the parlor rather than the alley without Langhorne's hook of alternating the 5 and ♭7 over each chord.

Langhorne has described how he came upon the unique electric sound he used to color all those iconic recordings. On sessions where electric guitar was needed, he would take a magnetic soundhole pickup (probably a DeArmond) and clamp it to his old Martin. Langhorne was friends with Sandy Bull, a brilliant multi-instrumentalist who made visionary instrumental records using delay, overdubbing, and non-Western musical elements. Langhorne would borrow Bull's brown Fender Twin Reverb for sessions. Being heavily influenced by the Staples Singers patriarch and guitarist Roebuck Staples, he would fiddle with the amp's tremolo until he found a speed that was compatible with the tune's tempo and feel.

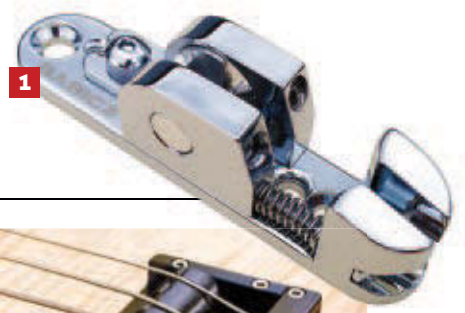
I did were significant and timeless in a way, so I didn't have to do anything else." Still, 2011 saw the release of his one official solo record, *Mr. Tambourine Man*, a Caribbean-influenced affair featuring mostly keyboards and percussion.

As they say: "Those who know, know." But if the vast majority remains unaware of this extraordinary talent, perhaps it's because he has always considered himself creatively ambitious, rather than career ambitious. Jonathan Demme offers an explanation: "He never had to look for work. People came to him. He is a tremendously unambitious guy. That's how he can be a genius and not better known."

Langhorne has his own explanation: "I have always believed that fame is a curse," he says. "I don't envy one of the famous people that I have ever met."

Special Bridge Designs

BY HEIKO HOEPFINGER



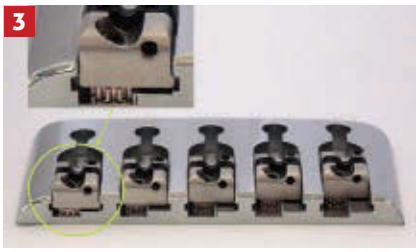


Photo 1. courtesy Full Contact Hardware (fullcontactdardware.com) Photo 2. courtesy KSM Guitars (ksmguitars.com) Photo 3. courtesy ETS Hardware (ets-hardware.com)

Now that we've looked at how different bridges are constructed ["Exploring Bridge Designs," June 2014], let's focus on several specialized designs that aim to enhance tone. For decades, the strings on an electric bass have essentially rested on two or sometimes three tiny screws. This has been true from the very first Fender right up to recent high-mass locking bridges. Though these bridges may look different and vary mechanically, they all have one thing in common: Small saddle-height adjustment screws take all the force from both a string's downward pressure and its vibrations.

Even though we all can agree the bridge is one of the instrument's essential components, we don't often hear it described as being crucial for tone. The argument for a high-mass bridge is basically "Let's not lose any vibration in the bridge," while the opposing argument is typically "Jaco only needed a traditional design and this vibrational loss is part of the mojo."

There are many forum entries by modders who've swapped out bridges and describe rather subtle differences in tone. Could this be because these bridges share those tiny screws at a crucial position? It's true that most lockable bridges have a better resistance to side movement than those with simpler bent steel saddles, but despite the "more mass is better" argument, it still boils down to the small screws being the essential connection to the bridge base plate and ultimately to the body.

As you'd expect, a few creative minds try to find a different path. Let's look at two bridges that are engineered to enhance tone by enlarging the contact area. Here's the basic argument: A larger contact area will enhance tone by maximizing the transfer of string-to-body vibrations. (For now, let's not discuss if this is what we really want, as there are also reasons why we might want to keep the vibration in the string!) With expanded contact, a string's downward pressure spreads across a larger area. This means less pressure per area, but on the plus side, a larger contact area can reduce side movement in the saddles.

If string vibration gets lost within the bridge, we can expect a different tone because this is the only vibrational orientation a magnetic pickup is able to track. (A short reminder: Our strings induce a current when they *cross* the lines of the magnetic field, but do nothing when they move along these lines. For more details, read Gregg Stock's "Maxwell's Silver Hammer of the Gods" in the February 2012 issue.)

To my knowledge, there are only two designs that pursue this route of enlarging the contact area: the KSM Foundation Bass Bridge and the Babicz Full Contact Hardware bridge. Both use classic screws to slide the bridge forward or backward to set intonation. While each design replaces the height adjustment screws with a full contact area, the central bridge part differs vastly.

The Full Contact Hardware bridge uses Babicz' "eCAM" technology with an asymmetrical hyperboloid in its center that moves the string up and down. Not into hyperboloids on a daily basis? Take a look at Babicz web video (fullcontactdardware.com) to see how it works. This technology is available in 4- and 5-string units with a base plate and also as an individual single-string device, the FCH-1 Solo Rail (**Photo 1**).

The KSM (**Photo 2**) offers adjustment via a sliding mechanism. The main bridge element is angularly cut into two pieces, so that any movement along the strings changes height. This is tricky to describe, but KSM has a video (ksmguitars.com/bridge.html) with a clever mockup to illustrate this two-piece "ramp-and-saddle" system. One aspect of the ramp slider mechanism is that any change in height also changes intonation. No problem, as long as you finish height adjustment first and then proceed with intonation and avoid quickly readjusting string height onstage. The Foundation bridge also has an elongated string contact zone that will help to enhance vibrational transfer even more.

And finally, there is one bridge that only partially fits into our discussion—the Transmission Bridge by ETS (**Photo 3**). The real kicker here is how you set the intonation. Each bridge part has its own gearing mechanism, which moves it back and forth in full contact with the base plate. That said, each saddle has those two small screws for height adjustment.

Okay, everybody wants to know what's best, right? Although I'm not a fan of the "let that vibration travel anywhere" theory, the answer depends on too many other parameters to declare what will work best for you. A stiff construction certainly helps you achieve a focused and strong tone. Also, not losing any of the vibrations within the bridge will yield a richer tone, but we can only speculate whether this provides the character you're looking for and how the sound will blend with the rest of your hardware.

HEIKO HOEPFINGER *is a German physicist and long-time bassist, classical guitarist, and motorcycle enthusiast. His work on fuel cells for the European orbital glider Hermes led him to form BassLab (basslab.de)—a manufacturer of monocoque guitars and basses.*

AT GUITAR CENTER

SOUNDGARDEN

SUPERUNKNOWN TURNS 20

The early '90s were pivotal years in music, with the rise of grunge, the demise of glam metal and, at times, an obscure vision of what rock was and where it was headed. All that changed with Soundgarden's 1994 release, *Superunknown*, which brought alternative, punk and hard rock together in one seminal album. A success with fans and critics alike, the collection of songs now celebrating its 20th anniversary sounds as fresh and relevant today as when it was released.

"We didn't sit and, like, have a band meeting and talk about reinventing ourselves," Chris Cornell, lead vocalist and guitarist explains. "We just started doing different things, all of us, bringing in new ideas and things that were a different approach. We had a big album to live up to, which was *Badmotorfinger*. It was an album that a lot of critics liked … but also a lot of really hardcore Soundgarden fans that had been around for a long time that came to club shows where there were 40 people … those guys loved it. That was kind of the album they had wanted us to make for years and they finally got it."

Combining elements from a few guitars used by Cornell over the years, Gibson was able to craft an ES-335 signature model for the frontman. "This immediately became my favorite guitar to play …" Cornell says, "It has kind of a mid-rangy, rattley sound that cuts through a mix really well and makes, like, a riff-rock song sound like Soundgarden."

See the gear and the full interview at guitarcenter.com.

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ALL WE SELL IS THE GREATEST FEELING ON EARTH

The Infamous Telecaster Neck Pickup

BY DIRK WACKER

The anatomy of a Tele neck pickup.

Now that we've explored Telecaster bridge pickups, we've arrived at the final stage of our journey: the neck pickup. Smaller than a Stratocaster pickup, the stock Tele neck pickup sports a closed metal cover and is usually installed with two wood screws that tap right into the body underneath the pickguard.

Few players really love the Tele neck pickup. Why is this? I think it has to do with the remarkable sonic differences between the Tele's two pickups. The bridge pickup has a crystal-clear, loud, and twangy tone, while the neck pickup delivers less volume and has a kind of husky, colorless sound. When you switch from the bridge directly to the neck pickup, it sometimes feels as if something's wrong. Most players (myself included) don't like its sound and simply don't use it. But it's a shame to only use one pickup in a guitar that offers two!

Most of the muffled sound is caused by the metal cover, especially when it's not made of German silver (an alloy consisting of copper, nickel, and zinc), so it's always a good idea to remove the cover to enhance the pickup's tone. After removing the metal cover, if the coil wire is exposed you can protect it by wrapping it in some pickup tape. The cover is there to provide shielding, and if you don't want to lose this benefit, install an "open-frame" replacement metal cover. Essentially, this is a ring that protects the pickup, but leaves the top open. This helps the pickup's tone a lot, yet maintains most of the shielding.

If this doesn't do the trick for you, it's time to think about a replacement pickup. But remember, unless it's a drop-in Tele design, installing a replacement neck pickup requires enlarging the pickup cavity and either buying a new pickguard or reworking your current one. You'll also need to decide whether you want to stick with the traditional mounting method (screws surrounded by latex tubing going directly into the wood) or use a Strat-style method of drilling two holes through the pickguard. That said, there are some superb alternatives to the stock Tele neck pickup.

Stratocaster. We all know the magic tone of a Stratocaster neck pickup. It's the perfect mate to a Telecaster bridge pickup, and even some Fender signature models like the Jerry Donahue and Clarence White Telecasters leave the factory with one. The benefits? You get a true Strat tone soloing the neck pickup, and it also sounds great combined with the Tele bridge pickup because the Strat pickup contributes warmth.

P-90. One of my personal choices is a P-90 soapbar pickup, but you can also use a P-94 in standard humbucker size. A P-90 looks great on a Telecaster, and its fat single-coil tone is very versatile. An outstanding combination is an Esquire/Nocaster/Broadcaster-style bridge pickup plus a P-90 at the neck. Both sounds fit together perfectly, and when you use 4-way switching wiring with both pickups in series rather than parallel, you can make every tube amp sing.

Mini-humbucker/Firebird. This is another great choice with a tone that's similar to a P-90, but a tad fatter and warmer—and naturally free of hum and noise because these are real humbuckers! The enclosed Firebird pickup offers a bit more high end compared to the mini-humbucker with its open pole-piece row. Nashville session giant Brent Mason orients his neck-position mini-humbucker so the open pole-piece row faces the bridge. Compared to the standard installation, this gives the pickup a little more treble bite. Sonically, this pickup type falls between a P-90 single-coil and a full PAF-style humbucker.

PAF-style humbucker. Ah—the classic Keith Richards configuration. A full-sized humbucker delivers a Les Paul-inspired neck pickup tone, but because of the Telecaster's longer scale length, you get a stronger attack and more note definition. Surprisingly, the sound of a vintage-flavored PAF humbucker works well with a Tele bridge pickup, and playing them together wired in parallel results in a well-balanced tone in the P-90 ballpark.

Lipstick. With its glassy, twangy tone, the lipstick pickup is a perfect choice for funk, ska, surf, or reggae players. I recommend pairing it with a warmer-sounding bridge pickup—a Nocaster-type or something in the overwound/Texas Special ballpark. A lipstick is also ideal if you want to imitate flattop strumming on your Tele: Roll back the volume to about 60 or 70 percent and make sure you're not using a treble-bleed network on the volume pot. Configured this way, a lipstick neck pickup sounds quite "acoustic."

Charlie Christian. This design sounds marvelous on a Tele in the neck position, and not only for jazz, swing, and bebop. In addition to the original Gibson version with its metal frame, some companies offer CC pickups in a standard humbucker shape, so putting one in your Tele is much easier than it was years ago. This pickup sounds fat and mellow, but always defined with clear top end and tons of sustain.

DeArmond/Filter'Tron. A great choice for classic rock 'n' roll, surf, and of course, rockabilly. Bright, warm, and twangy, the Gretsch-inspired pickup is a perfect mate for all Nocaster-style bridge pickups. Many rockabilly players prefer a Bigsby-equipped Tele with this pickup combination instead of a feedback-prone semi-hollow guitar. It's a fine way to get old-school tone.

Next time we'll put our Teles out of phase, and I'll share a funny historic story on this topic. Until then, keep on modding!

DIRK WACKER *lives in Germany where he plays country, rockabilly, and surf music in two bands, works regularly as a session musician for a local studio, and writes for several guitar mags. He's also a hardcore guitar and amp DIY-er who runs an extensive website on the subject (singlecoil.com).*

THE LONG ROAD

The road is long and hard, but worth the journey.

I've bought, owned and played them all.

THIS ONE'S MINE

Nothing fancy.

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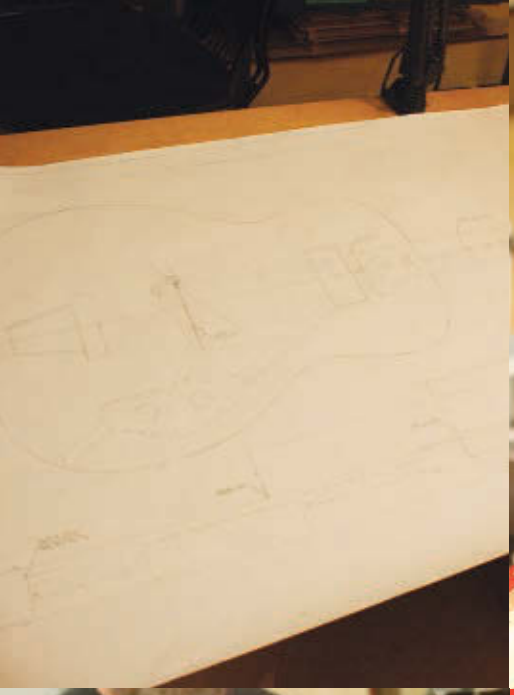


THE MINNESOTA STATE COLLEGE

INSIDE "RED WING"

STORY & PHOTOS
BY JORDAN WAGNER

GUITAR REPAIR & BUILDING PROGRAM

In the summer of 2011, Colin Samek faced a grim problem while riding with his band to the next tour date: His guitar's output jack plate had been ripped out during a violent show the night before, and now the jack was hanging loose. Time and money were tight, so he needed a creative fix.

Samek found a plastic soda bottle cap on the van floor. He heated a screwdriver tip with a lighter, punched a hole through the cap, and bored around the edges until the hole was wide enough for the jack. He fused the hole's edges to the jack's threads by heating them with the lighter, and then secured the makeshift plastic plate to the jack hole with a little super glue. The repair wasn't pretty, but it survived the tour. MacGyver would have been proud.

Little did Colin know that in a few years he would be skillfully designing and building his own guitars.

Samek displays his finished acoustic guitar. The instrument boasts back and sides of padouk, a mahogany neck, a Sitka Spruce top, a rosewood fretboard, and pearloid binding.

Time for a Change

After two years working janitorial and attendant jobs, Samek enrolled in the Guitar Repair and Building program at Minnesota State College-Southeastern Technical in Red Wing, Minnesota. The renowned program, often referred to simply as "Red Wing," has trained some of the world's most skilled luthiers. Since the mid-'70s, graduates of both the one- and two-year programs have gone on to work for Fender, Paul Reed Smith, Collings, Benedetto, and other companies—or started their own.

"I had no idea that you could even go to school for such a thing," says Samek, who had no previous lutherie experience beyond simple repairs and setups. "But a day came when I realized I needed to do something with my life." He laughs. "Hey, if I'm still going to be mowing lawns, I'd like to have my own to mow."

Samek wasn't the first student to enroll without prior training. Both Luther Zielsdorf and Daniel Thompson of Collings Guitars enrolled in Red Wing with little more than a love of all things guitar. "When I found out about the school," recalls Zielsdorf, who completed the one-year program in 2004, "I wasn't aware that there was an option to learn beyond an apprenticeship with a master luthier. I learned a lot very quickly about materials, techniques, you name it—and loved every minute of it."

Thompson completed the one-year program in 2011. His prior experience was limited to working from a kit, plus the basic wiring repair he'd taught himself. "They have very high standards for everything there," he says. "Whether it's maintaining your tools or buffing a finish until it's absolutely spotless, you gain a good eye for noticing imperfections. When I joined Collings, I'd already developed a high standard for quality at Red Wing."

Instructors David Vincent, Brian Boedigheimer, Steve Rossow, and Mark Hayes provide students with a complete lutherie education in only four semesters. Many luthiers have trained under Vincent since he joined the program in 1984. Boedigheimer graduated from the program in 1994, and returned to teach after several years of repairing and building his own instruments, as well as working for Benedict Guitars.

The Right Stuff

All first-year students are required to design and build a traditional steel-string

Opposite page: (Clockwise from upper left) 1. Each student drew up blueprints for their instruments. This one is for Samek's electric guitar. 2. The students learn to measure and carve custom necks by hand. Samek based his profile on that of his old Aria acoustic. 3. Proper tool maintenance is crucial. Samek often sharpened his chisel the night before class. 4. Samek sourced padouk, mahogany, and Sitka spruce blanks for his acoustic guitar. 5. Samek applying a sunburst finish in the paint booth. 6. Samek and classmate Franziska Andonopoulos blend the edges of hand-applied bursts to achieve smooth transitions. 7. Second-year students are taught such advanced techniques as constructing archtops and mandolins. 8. Instructor Brian Boedigheimer demonstrates brushing techniques.

Samek's finished electric guitar. The body is African black limba. The neck and fretboard are maple. Hardware includes a Stewart-MacDonald Golden Age P-90 pickup, a Babicz Full Contact bridge, and a trapeze tailpiece.

acoustic guitar by the end of the year. They're also offered the option of building a bolt-on electric guitar, as Samek chose to do. Second-year students have the choice of designing and building a mandolin or an archtop guitar, plus the opportunity to use Red Wing's facilities to build an additional acoustic guitar, electric guitar, or mandolin. Entering students receive a list of needed tools and supplies, along with course syllabi listing reference books from experts like Dan Erlewine and Les Schatten.

Classrooms are customized to accommodate Red Wing's unique process: The first-year classroom is laid out with large desks that students use for most of their daily work and smaller projects. There are also several larger drafting desks for projects requiring extra space. An illuminated counter serves as a demo area for lacquer mixing, wiring, and soldering techniques. The dozens of electric guitars of varying styles hanging on the wall are used for setup and repair training. An adjacent room contains a walk-in spray booth and drying area for practicing painting and finishing techniques.

Second-year students have access to a fully equipped woodworking shop, including a three-axis CNC router. Their program includes a class on using the machine to create molds and templates, plus a prerequisite course on computer drafting in AutoCAD. (The second-year program isn't required for graduation.)

Samek, who starts his second year of the program in August of 2014, notes that the second-year students are always willing to offer advice. "It's one of my favorite things about the school," he says. "Students are willing to help create a dialog about the proper way to do things."

New Beginnings

Since the drive from his home in Iowa City, Iowa, to Red Wing is over four hours, Samek decided to move closer to the school. His rent for a room on the outskirts of town includes use of the house's garage and workshop, where Samek spends much of his time working on school projects.

Initially, Samek and his classmates were taught how to safely use and maintain hand and power tools. Students would huddle around Matt Hayes desk, watching him demonstrate things like the way to hold a chisel when sharpening it. The students would then return to their desks and try it themselves, testing the results on scrap wood. "It's similar to high school shop class," says Samek, "but focused on what would be used to build acoustic and electric guitars. They develop good rudiments."

Sharpening a chisel to a hair-splitting tip might sound boring to some, but not to Samek, who often unwinds by cleaning and sharpening his hand tools to a soundtrack of classic country and R&B. "I've never had nice tools before, and it's fun and exciting to be able to learn those techniques. Believe me—it's a hell of a lot harder to do this type of work if you don't have well-maintained equipment."

After completing the tools course, Samek's class spent the next few weeks on basic guitar anatomy, including steel-string acoustics, classical guitars, archtops, and electrics. The students were introduced to various types of electric guitar bridges and instructed on identifying the parts used in different types of tremolo bridges. Next came a two-part section on the history of acoustic and electric guitar development. "Understanding the history is important," Samek explains. "Students are more likely to solve building and repair problems if they understand how the great inventors and luthiers of the past conquered those problems. It was part history, and part critical thinking."

By this point students were encouraged to start thinking about the materials they'd use in their acoustic guitar projects. David Vincent discussed wood properties, how to identify woods by their shades and grains, and using "tap tone" techniques to select the most resonant pieces.

All first-year students take an electric guitar setup lab that trains them in proper stringing, adjustment, bridge installation, wiring, and basic repairs. They learn how to take essential measurements such as neck relief and extension height to determine things like optimal saddle height and nut slot depth. After the setups are graded, the teacher deliberately misadjusts them so the next class can fix them.

The Deep End

Over the course of the first semester, Samek and his class covered nearly every facet of conventional acoustic and electric guitar design. The curriculum covered such topics as the physics behind the movement of wood under varying degrees of tension, the use and identification of adhesives and abrasives, resetting acoustic necks, and fretboard leveling, radiusing, and refretting.

At times it was daunting. "Every new thing I'd attempt came with a set of nerves," admits Samek. "But after a while, you just get locked into a mode, and it suddenly doesn't seem as scary. For example, we had to do three acoustic bridge copies. We were given a wood blank and a bridge from a random acoustic guitar, and we'd have to make an exact copy—the height, angles, all of that stuff. I kept asking myself, how could I possibly make this exactly the same?"

Samek eventually realized that the assignment was designed in part to teach the all-important lessons of working slowly—and knowing when to stop. "We figured out that a big key was knowing

when to stop instead of continuing to shape it," he recalls. "After that, it came along much easier, and we worried a lot less about messing up. It taught me how important it is to get it 'close enough,' and then go back over it carefully to get it absolutely perfect, a little bit at a time."

Choosing the right tools after assessing a problem was another important lesson. For an assignment on making pyramid bridges for classical guitars, the students were given only a diagram to work from instead of a real-life example. Samek explains, "We had to figure out how to cut the pyramids properly, as well as what tools to use. It was harder than I expected! Should I use a scraper? A file? Maybe a chisel? It's one of those things you don't think about until you're faced with it."

When Samek's class reconvened after Christmas break, it was time to start building the instruments that they'd designed the previous semester. Vincent and Boedigheimer gave the class pointers on acquiring wood, but allowed them the freedom to source materials for themselves. Lectures and labs led the class step-by-step toward completing their guitars while training them in finishing technique, structural repair, and how to calculate repair estimates for customers.

Samek turned to the Gibson L-00 of the early 1930s for inspiration when designing his acoustic guitar. "I looked into a lot of designs throughout several decades, and the size and shape of that one really called out to me," he says.

Using the dimensions and shape of the classic flattop, Samek drew up a large blueprint. The midsized dreadnought would have a back and sides of padouk, a Sitka spruce top, and a mahogany neck. Its fretboard and bridge would be made of padouk, with a maple bridge plate. There would be a soundhole rosette and pearloid binding. For a final personal touch, the neck shape would match Samek's well-worn Aria acoustic guitar, though the instrument would feature Gibson's 24.625" scale length. "I was going for a gaudy '50s country and western look, which I think is pretty cool," says Samek.

Samek chose spruce for the top because of its ubiquity in acoustic guitar design, but says he selected padouk out of curiosity: "I also had no idea how it would sound, but I wanted to find out."

His electric guitar was more eclectic. Samek wanted it to have a single P-90 pickup in the neck position because he'd never owned a guitar with that configuration. Using knowledge learned in class, he chose maple and African black limba for the neck and body, hoping their bright tonalities would balance out the tone. "I wanted something that wasn't as bright as a Telecaster, but not overly bassy either," he explains. "I think I got what I was going for."

Samek modeled the body shape on a '50s Silvertone single-cut hollowbody electric borrowed from a friend, though his design omitted the *Continued on p. 123*

Lutherie: Lifelong Learning

The Guitar Building and Repair Program at Southeast Technical has trained many of the world's most talented luthiers and technicians, and Nashville-based Andrew Jellison is certainly one of them. After graduating from the program with certificates in both guitar and violin construction and repair, Jellison worked for three years under the wing of celebrated luthier Ross Teigen before moving to Nashville to work for George Gruhn at his world-famous vintage guitar store. For 20 years, Jellison has contributed his expertise and devotion to Gruhn and his customers. We recently spoke with Jellison about his time at Red Wing and the skills he learned there, and also about lessons learned outside the classroom.

How has real-world experience helped you grow in your field?

Like most people graduating from school, I thought I had it all licked. I figured that I was ready to take on the world, and that I'd get a job doing what I went to school to learn how to do. But what I discovered really quickly was that I wasn't prepared to face projects with so many inconsistencies. I certainly knew a lot of skills that would work in a lot of circumstances, but they rarely covered *all* of the circumstances completely. Every situation—even something mundane like, like a bridge re-glue—has unique characteristics that you have to watch out for. It's especially true with older instruments with wood that has had years to deflect and turn into what it is now. It took me a while to realize that wood changes, just like people.

Did you come to that realization by the time you moved to Nashville and started working at Gruhn's Guitars?

When I left Ross Teigen after three years and came to Gruhn's, I thought that because I had some experience—as well as being young and naïve—that I was going to repair every broken guitar they had there. And after working on over 600 guitars in about 28 years, I know that was a completely ridiculous notion. Every repair and build has the potential for lots of unique variables—the problem is that you don't know what they are until you dig in and start to work on them.

Are there skills or lessons that you learned at Red Wing that you still use in your career today?

Oh, sure. I can look back now and still remember things that both David Vincent and Elizabeth Butler taught me that are still very useful and significant to this day. Elizabeth had two mottos that have stuck with me throughout the years, the first being, "the light is your friend," and the other is, "flat and square." Knowing those two things have carried me through more tasks working with any material than anything else that I've ever learned. If I'm trying to join two pieces of wood, for example, using light effectively will give me a very good indication of whether or not they'll match and work together. And if they're not flat and square, I'm most likely going to have a problem.

Obviously, not everything that either myself or other techs might work on is going to be flat and square—one example might be working on a backside-radiused bridge for an older Gibson acoustic. In those types of situations where it'll boil down to having to hand-fit something, I really appreciate how much Elizabeth made us work on small details by hand. She forced me to use my eyes to notice details that I didn't think I could see.

Those types of skills are becoming scarcer as technology progresses.

Technology is a fantastic thing, and it's been really great for a lot of manufacturers in terms of their instruments' costs, consistency, and quantity. There's a Catch-22 to it, though. The instruments that are especially significant to me were built in the late 1800s, right around the time when Martin was really getting started in building their flattops and Gibson was ramping up their acoustic production. They didn't have CNC machines, of course, but they had a lot more than just a simple set of tools. Those guitars had more hands touching them and putting them together than a CNC-made guitar being built in a factory today. It doesn't necessarily make them better, but it makes them special. Many of these guitars have several people's blood, sweat, and tears put into them. They were learned skills that those people prided themselves on. And those guitars have souls.

So the school strengthened your perception and abilities to see less-noticeable imperfections?

Yeah, it did. It gave me a good place in which to start and many things that I still rely on. But there's much out there to see. Even after all this time, I'm still learning new things every day, personally and skillfully.

Can you give an example?

It wasn't until many years after working in this field that I had a moment to sort of, "step away" from what I'd been doing and look back on it. I realized that it had become more than just a job, and more of a philosophy for me. When I'm working on an instrument, I try to lock myself into a mode in which I'm focused solely on making it the best it can ever be—and when I figured out how mentally to remove myself from the equation and work *for* the instrument instead of *on* it, that had more significance than anything I was taught in schools.

Photo courtesy of Gruhn's Guitars

cutaway. He chose black limba partly because of its similarities to korina. "It's also easy to work with," he notes, "and it looks awesome with a simple clear coat, which lets the wood's amber color and black streaks come through." The plans also included a glossy maple fretboard, 25" scale, Gibson-style tuner layout, Babicz Full Contact bridge, trapeze tailpiece, and a thin coat of nitrocellulose lacquer. Again, the neck shape would be modeled from his old Aria.

The Build Goes On

The extra time Samek spent studying and practicing paid off as he worked through his builds. He proceeded slowly and methodically, handcarving the necks, routing the truss rods, and installing the fretboards.

There were a few scares: At one point while routing a body off of a template, the end grain got caught and the body flew off the routing table, hitting the wall. "My stomach just sank," recalls Samek. "I had to redraw the curve along the back and use a band saw to cut out the missing chunks." The accident was a blessing in disguise, however—Samek actually prefers the body with its accidental streamlining.

Meanwhile, instruction continued. Boedigheimer tutored the students in finishing techniques, showing them how to use a color wheel to determine combinations, how to properly mix lacquers, and varying application techniques. In one lesson he explained how to apply a Gibson-style sunburst by using a yellow basecoat, and then applying a diluted red layer around the edge before rubbing it towards the center of the wood. The class practiced the technique using practice boards cut into Les Paul shapes. "It probably doesn't help that I really don't like sunbursts," jokes Samek, who spent extra time in the finishing room making his burst absolutely symmetrical.

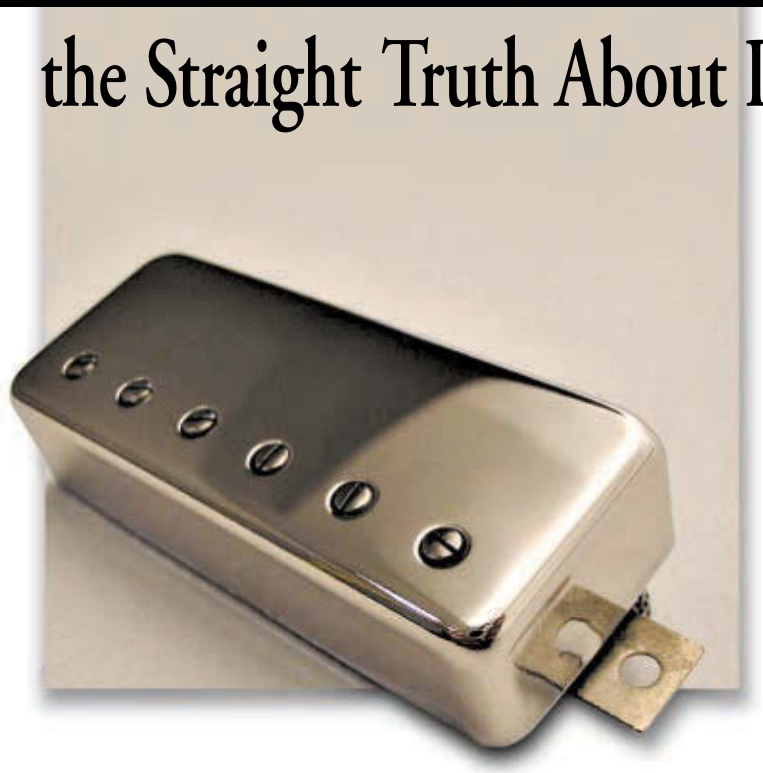
By mid-May Samek finally got to string up his finished acoustic and electric guitars—nearly 10 months after entering Red Wing with little professional guitar repair knowledge. His guitars were displayed with his classmates' at the annual graduation guitar show, which draws students, alumni, and industry professionals.

Samek opted to return for the second-year program this year. "I'm really looking forward to building an archtop," he says. "I'd like to know about the construction differences between archtops and acoustics."

Samek emphasizes how friendly and comfortable the teaching environment is—and that even the best students always have something new to learn: "You could try to learn how to do this in your garage by yourself, and you might eventually develop sound ways of making things work. But you'll probably spend a lot more time and energy doing it that way, as opposed to being surrounded by teachers and students all focused on the same thing. It's a nice community of reference and knowledge that's hard to find anywhere else."

LOLLAR PICKUPS™

the Straight Truth About Pickups by Jason Lollar



The "magic" found in some (but not all) classic vintage pickups was created by accident. Don't let anyone tell you different. And over time, some pretty stellar accidents happened. The only way to recreate that magic is to study more than a few exceptional examples of all the classic pickup types, while acquiring a thorough understanding of exactly what materials were used and precisely how each pickup was constructed and wound. Only then is the "magic" repeatable, if you are willing to spend the time and money required to chase the dragon. I am.

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The Method Behind the Madness of "Miracle Man"

BY ZAKK WYLDE

Hello there, my brethren and sisters o' doom! Big Black Label thanks to the gang at *PG* for allowing me to talk about what we all breathe and bleed for—the love of guitar!

Since this is our first gathering, I figured I'd start off talking about the first riff/song I wrote with Ozzy Osbourne some 27 years ago. "Miracle Man" will always hold a special place in my heart, being that it was the first thing I wrote with The Boss. It was 1987, and Ozzy and I had just begun writing *No Rest for the Wicked* in Brighton, England. We were jamming in a horse stall that had been converted into a living space/rehearsal studio. There was a cozy little pub with a beer garden within walking distance, and the routine basically consisted of jamming riffs all day, then going to the pub and sitting in with the house band. Nothing but good times, indeed!

When people ask me how I came up with the guitar parts, I tell them I used St. Hendrix's "Foxy Lady" fingering. I was messing around with that, then I sped it up a bit, added some 16th-notes and some Marshall chunk, and next thing you know it's "Miracle Man." But while you can find note-for-note performances of the rhythm and solo on YouTube, a lot of players don't understand the method behind the madness.

When I was 14 and decided I was going to dedicate my life to the guitar, I was blessed with having an amazing guitar teacher named Leroy Wright. He taught me songs by my favorite bands to keep it fun, but he also taught me scales, chord inversions, and the theory behind why it all worked. See, it's awesome to learn your favorite players' solos—like Pope Page's "Stairway to Heaven" solo, or St. Rhoads' "Mr. Crowley" solo—but do you know *how* those solos were created?

Scales, scales, and more scales.

When Leroy explained scales to me, it was like seeing an amazing card trick from one of your friends, and then having it broken down and explained. Mystery revealed! *That's* the power of scales.

When I learned the blues lick in "Back in Black," that was a major breakthrough for me—that, technically, I could actually play it. But having Leroy show me *why* it worked was just as huge. Like having a car engine with parts scattered everywhere, then being shown how this part connects to this part and so on. Each part serves a purpose.

So when an aspiring guitarist asks me for advice, I tell them to learn their fretboard. In other words, learn how a basic scale that you might play in one spot on the neck maps out across the entire fretboard. When you do that, it opens up endless possibilities for different fingering patterns and note combinations—because even though they're the same notes, they have a different character and vibe on different parts of the neck.

For instance, I built the "Miracle Man" solo around the F♯ natural minor scale (aka F♯ Aeolian, F♯-G♯-A-B-C♯-D-E), which starts on the 2nd fret of the 6th string (**Ex. 1**). See all those red dots? Those are all the F♯ notes in the scale—they're kind of like the home base for the solo.

Next, take a look at the diagram of the entire guitar fretboard in **Ex. 2**. Even though this looks complicated, these are *exactly* the same notes as Ex.1. Don't believe me? Check it out: If you start playing the notes in Ex. 2 on the 2nd fret of the 6th string, but play four notes on that string instead of just the three shown in Ex. 1, you'll see that the note on the 7th fret of the 6th string sounds just like the one at the 2nd fret on the 5th string. Experiment some more, and you'll hear how all the other notes in Ex. 1 map out just like Ex. 2 shows—only they branch off into higher octaves as you go up the neck.

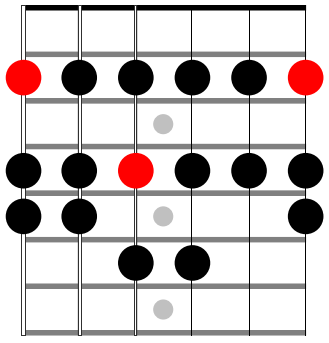
And it's a repeating pattern, too. See how the same basic pattern from Ex.1 starts all over again once you get up to the F♯ octave at the 14th fret on the 6th string? Memorize the pattern from Ex. 2, because you're going to be using it for the rest of your guitar-playing life.

Okay, now let's see how this figures into the first part of the "Miracle Man" solo. We're not going to tackle the entire solo note-for-note, because the main point here is to learn the larger lesson of how scales map out across the whole neck to give you a blank canvas of soloing possibilities.

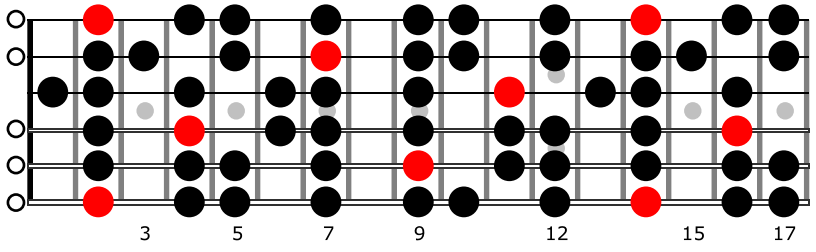
This is important: When I recorded the song, I was tuned down a half-step, so if you're referencing the original track, you'll want to retune to E♭ standard.

The solo begins with what I call "the triplet" section, because each one has a repeating three-note pattern—only these patterns are played in the part of the F♯ Aeolian scale that's up at the 9th fret and beyond.

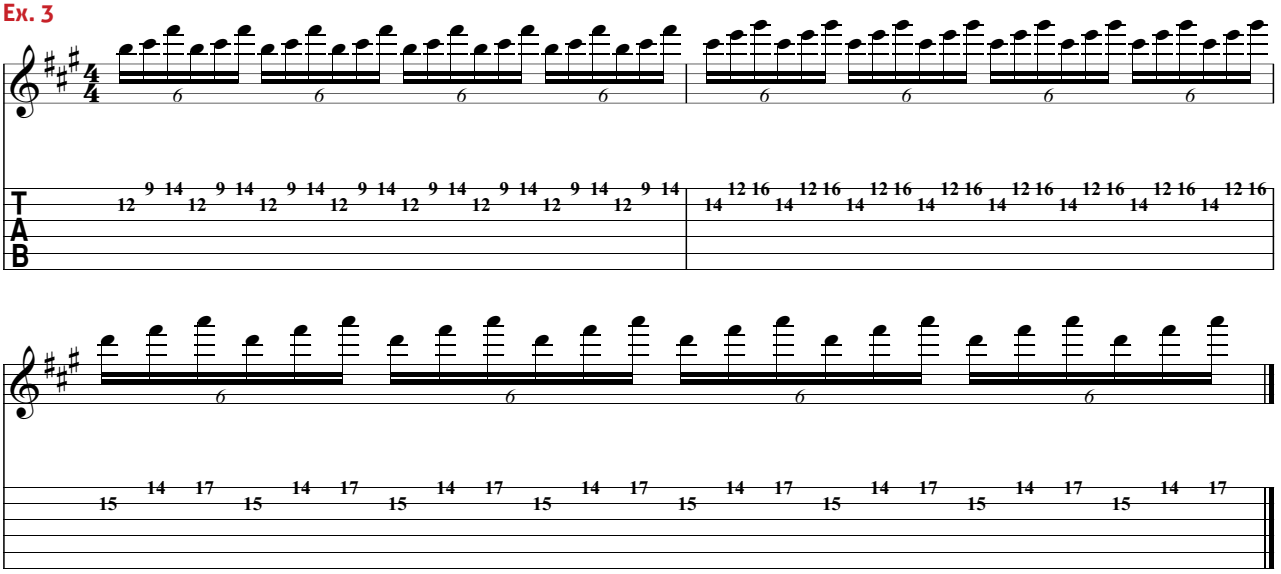
Ex. 1



Ex. 2



Ex. 3



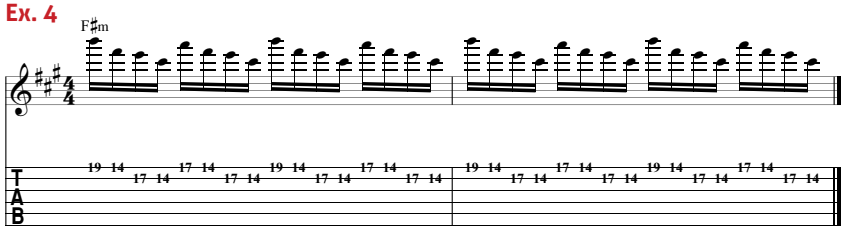
As you'll see in **Ex. 3**, each measure has a different three-note lick that's played eight times: twice per beat in each 4/4 measure. This makes them *sextuplets*. Whoa, gotta love the sound of that! Check out the tab to see where the notes are located on the fretboard.

The patterns start with a note on the 2nd string, followed by two notes played on the 1st string. Start slowly and be patient. As you keep working on picking these patterns cleanly and with a steady, even rhythm, you'll be able to work up to the speed on the recording.

The next section of the solo (**Ex. 4**) will take even more patience and slow practice, because it features two quickly picked *four*-note patterns inspired by fusion guitar great John McLaughlin. These patterns alternate: The first four-note pattern falls on beats one and three, while the second pattern falls on beats two and four.

Next, the solo repeats the licks from Examples 3 and 4, but you get a bit of a break after that: Instead of repeating the fast, four-note licks from Ex. 4, you only have to play a bend on each beat of the measure. But listen closely—this measure has six beats instead of the usual four.

Ex. 4



The second half of the "Miracle Man" solo changes keys to C♯ Aeolian (C♯-D♯-E-F♯-G♯-A-B). This might sound confusing, but it actually illustrates what I was talking about when I said my teacher Leroy opened my eyes to the mystery of writing songs, riffs, and licks. We're not going to dissect this part of the solo, but if you start playing the fretboard map from Ex. 2 along with the recording—only starting up at the 6th string's 9th fret instead of the 2nd fret—you'll hear that it fits in with what I'm playing in the last half of the solo. And if you mess around long enough, you'll probably figure out some of the licks I'm playing! Just remember to tune down a half-step before you try to decode these licks.

Before I go, let's talk real quick about the final step in unlocking your whole fretboard and learning how to solo like your heroes: The fancy scale names you hear guitarists talking about in lessons or interviews—stuff like the Mixolydian or Dorian modes—are actually right there inside the pattern in Ex. 2. The different names simply refer to where you start within that fretboard map. Each of these seven different starting points (or "modes") can give a song a unique feel when you build your chord schemes around these note combinations. [**Editor's note:** For more details on this, check out "Visualizing the Modes" by Herman Li at premierguitar.com/lessons.]

Stay strong/bleed guitar.

ZAKK WYLDE *achieved international acclaim as the guitarist for metal legend Ozzy Osbourne beginning in 1987 and extending well into the 2000s. He's still close with Ozzy and occasionally performs with him, though is primary focus these days is on fronting Black Label Society and spending time with his wife, Barbaranne, and their four children.*

A Fender Head Transplant

BY JEFF BOBER

Q: **Jeff,**
I have an oddball amp—and a few questions.
My amp is the amplifier section of an early-'70s Bassman in a homemade head box. The amp has the expected power-supply caps in need of repair, and one of the tubes exhibits some blue glow and an occasional pop. I pulled the power tubes to replace them. All the schematics call for two 6L6GC power tubes, but there are KT66s in my amp. Now I wonder if the amp has been modified. (The schematic, as I'm sure you know, calls fortwo 7025s,one 12AT7,andtwo 6L6GCs.)
My questions:

1. Are 6L6s and KT66s swappable?
2. Are circuit changes required to run the KT66 tubes?
3. Are 7025s and 12AX7s interchangeable?

In the studio/bright setting my Guild Bluesbird sounds just fine, so I wonder whether tone-stack modifications were done. Can you point me to a good source of information on this subject?
Curtis L. Putnam

Above right: Some old combo amps, like this early-'70s silverface Fender Bassman Ten, have undergone a head transplant. Someone removed the original amplifier section and housed it in this homemade head box.

A: **Hello Curtis,**
Thanks for your question. While the amp itself is not much of an "oddball," I always enjoy seeing the creativity and craftsmanship (or lack thereof) that people put into alternative enclosures. Sometimes a combo chassis finds itself mounted in a head shell so it can be used with an assortment of speakers, and occasionally a head chassis gets turned into a one-off combo. Either is fine—it boils down to what best suits your needs.

Now, let's talk about those tubes, and I will attempt to be your good source of information on this subject. As you mentioned, your tube layout calls for two 7025s, one 12AT7, and two 6L6GCs. This is typical of the '70s silverface Bassman Ten combo. This differs from typical blackface and silverface Bassman heads, which have one more preamp tube, for a total of four. (There's actually another triode stage in the bass channel of those amps. Since there are two triodes in each preamp tube, this leaves one unused, which opens up some cool modification possibilities—but that's for another column.)

Your KT66 output tubes are fine replacements for the 6L6s. The KT66 is, for all practical concerns, the European equivalent of the American 6L6, and in most cases the two are interchangeable. KT66s were the tube of choice for early Marshall amps, and circuit-wise, the original JTM45 amps were almost identical to the Fender Bassman. But since the American 6L6 tubes used in the Bassman were more costly in the UK, Marshall used the more readily available European KT66. That, along with a few other circuit variations, and history was made.

When installing KT66s in an amp that was originally set up with a 6L6 output stage, you may need a bias adjustment, but generally the bias circuit needs no modification since the two tubes share similar bias-voltage requirements. Also, no tube socket rewiring is necessary. One possible limitation, though, is the proximity of the tube sockets, as KT66s tend to be much larger than 6L6s. I find the KT66 to be a bit more "glassy" or "shimmery" on the top end, in a very pleasing way. They also tend to compress a bit more, making it a very fun tube to play, at least for guitar. If you want to use your Bassman for bass, though, you might consider using the stock 6L6 tubes, as they are a bit tighter and less compressed and will probably give you a few more watts of output.

You also asked whether a 12AX7 and 7025 are interchangeable. Again, the answer is yes. The 7025 specified by Fender in the early days actually was a 12AX7 with a lower noise floor and perhaps fewer microphonics. (I don't know whether this was due to production or selection.) These were typically called for in the first preamp-tube position of each channel and in the reverb recovery section of reverb amps. Since there isn't a substantial amount of gain/overdrive in either of these circuits, the tube's noise floor is not a huge issue, and most 12AX7s generally work fine.

Be aware, though, that even if a preamp tube is new, there's a chance it may be noisy or microphonic. If you want to be sure you're installing a tube without noise issues in the first gain stage of an amp (and this is especially important in high-gain amps), lean toward tubes that are offered as "low noise," "low microphonics," or "selected." It may be worth the extra couple of bucks.

I hope this clears up your tube mystery. Now you can feel confident in turning up your Bassman Ten to 11!

WARNING:
All tube amplifiers contain lethal voltages. The most dangerous voltages are stored in electrolytic capacitors, even after the amp has been unplugged from the wall. Before you touch anything inside the amp chassis, it's imperative that these capacitors are discharged. If you are unsure of this procedure, consult your local amp tech.

JEFF BOBER, *is one of the godfathers of the low-wattage amp revolution. He co-founded and was originally the principal designer for Budda Amplification, though he launched EAST Amplification (eastamplification.com) in 2010. You can catch his podcasts at ampsandaxescast.com or email him at pgampman@gmail.com.*

"Like that first drink Friday evening to that last sermon Sunday morning."

Formed in the summer of 2013, **THE GUESSING GAME** is the brain child of **Jeff Rouse**, long time bassist of Duff McKagan's LOADED. "In the summer of 2013, I found myself with some much needed time on my hands. I knew it was time to find the right people to finally bring these songs I had been writing to life. Having spent the last 14 or so years writing, recording and touring in Loaded, it was time for me to get the 'other' songs I had been working on out of my head, onto tape, and see what happens."

Seeking out long time Seattle rock luminaries Kathy Moore (Brad, Satchel) Gary Westlake (Peter Frampton, Flight To Mars) Keith Ash (Star Anna) and Shawn Zellar(Redneck Girlfriend), Rouse knew this was something special – "They all breathed life and beauty into the songs and it was magnificent."

The debut album **Holy Crow** drips of heartache, regret and finally redemption.

PHOTO: JASON TANG

"We use many different brands of guitars and many different brands of amplifiers but we only want to use Weber speakers!"

Check out the band at **theguessinggameband.com**

Check out the gear at **www.tedweber.com**

WEBER SPEAKERS

The Beauty of a Loop

BY BEN FULTON

My restored '70s solid-state Echoplex EP-3 tape echo is quite beautiful, isn't it?

One of the greatest things about the luxury of continued existence is that you get to learn new things. It could even be in areas you may have already spent a lot of time on, things that you might feel something of an expert in, or things that have been staring you in the face for decades.

So it was for me a few weeks ago. I'm playing in a new band called the Bones. We did a few dates in the later part of 2013, but focus is really starting to kick in now, with dates booked and a potential recording planned for later this year. It's a three-piece with vox, and an interesting collection of players. The singer is from a soul/R&B background, the drummer and bass player are creatures in possession of the "Monster Groove," and then there's me attempting to squash Jimmy Page and Bill Frisell through the same fingers. So it's eclectic.

Until two weeks ago my rig for this band was comprised of a Telecaster into a Korg Pitchblack (using the custom tuner mute box project from the *PG* column "How to Build a True-Bypass Tuner/Mute Box," July 2013), a heavily modified Cry Baby wah, a Red Witch (RW) Fuzz God II, RW Grace compressor, RW Violetta delay, first-version Electro-Harmonix POG, RW Titan Delay with expression pedal control modifications, RW Famulus distortion, and finally a DigiTech Hardwire RV-7 reverb pedal, and from there into a rebuilt Jansen 6/20 (a New Zealand-made 20-watt amp from the 1960s).

This was a good sound that sat very nicely in the band. It was tasteful and sympathetic. But there were no laser beams. It was not a *compelling* sound, to my ears at least. What to do?

Revamp time: I changed out the Telecaster for a 1978 Les Paul Standard and decided to get the "foundation" tone right. I arrived at the following signal path: LP, Famulus, restored Echoplex EP-3, Jansen 6/20 amplifier. This was a grand sound—anything from a scream to a whisper. But I needed the POG in a few songs—and the fuzz and the 'verb and the modified Titan, and then of course the Violetta. I needed to use my tuner too (though I opted out of using a compressor on this version of the rig). The logical thing to do was to create a loop for these additional pedals—bring them all in, or bring them all out. Now, *this* was something I'd never done before! (I have friends who use a loop of pedals and I completely understand the process but I've just never given it a go.)

Wow! Über cool. The ability to "pre-program" a selection of effects earlier in the song, and then bring them all in with one footswitch? Wow. Double wow. Stupidly simple, but such a fantastic option. The foundation tone I love so much remains intact and unfettered, but when I want additional colors, click goes my loop switch. Marvelous.

Can't teach an old dog new tricks? Hish pish to that adage. Twenty-six years of playing guitar and never a loop of pedals to be seen at any stage—till now. Glory.

Stepping back from the specifics of this situation, I've realized there's a bigger lesson to be embraced. It's so easy to get caught up in thinking we know what's "right" (or even worse, what's "correct"). Certainly, many things in life are rather black and white for our own safety: Don't drive down the freeway on the wrong side of the road. Don't bathe in sulfuric acid. But in areas less governed by safety and self-preservation, like guitar tone and how we go about getting it, we can all benefit from opening the mind and trying new (and sometimes obvious) things.

To hear the straight-ahead "rock" version of this rig (LP + wah + EP3 + Marshall), check out this clip of me doing my very best "Jimmy Page:" youtube.com/watch?v=Tp8SFjJz7hU.

BEN FULTON *is a Libran. He likes long walks on the beach and loves watching the sun set. He likes going out dancing but is just as happy to cuddle up in front of the fire with a good movie and glass of Pinot. He also is the CEO and head designer at Red Witch Analog Pedals.*

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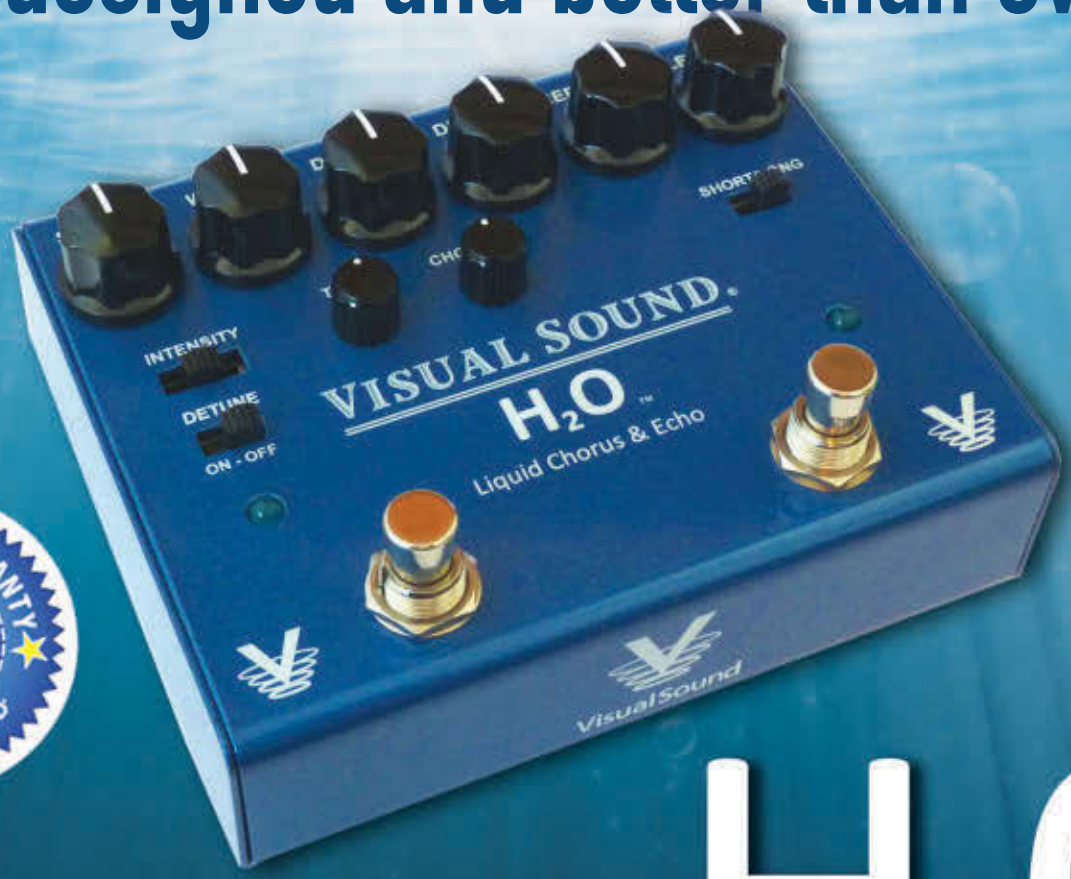

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Quick Hits

MOOER
LoFi Machine

By Shawn Hammond

Bummed your band can't find a keyboardist with vintage tonal sensibilities? Want to inject your tunes with 1980s Atari or Nintendo *bleep-bloop-bloop* action? The LoFi Machine puts both at your disposal in a space the size of a roll of quarters. Operation is ridiculously simple: The further you turn the bit knob, the more it imbues your signal with a digital character by reducing sampling depth (5–16 bits), while the tiny mix and sample knobs govern dry/wet ratio and sample-rate reduction (60–31,250 Hz), respectively, and a 3-way toggle optimizes EQ response for synth, guitar, or bass. Subtlety is kinda antithetical to the Machine's being, so I preferred max-ing mix, though turning sample all the way down helped fundamentals cut through without too much digital background clutter. Set the bit knob between noon and 3 o'clock, then fingerpick moderately overdriven chords for deliciously vibey Wurlitzer 200 or Rhodes electric-piano sounds. Or, summon ominous *Metroid* vibes or whimsical *Super Mario Bros.* sounds with bit settings past 3.

TEST GEAR *Danelectro '56 Baritone reissue, Squier Vintage Modified Telecaster Custom with Curtis Novak pickups, Schecter Ultra III with TV Jones Magna'Tron bridge pickup, Jaguar HC50 and Goodsell Valpreaux 21 amps*

RATINGS

$98 street, mooeraudio.com

Tones	5
Ease of Use	5
Build/Design	4
Value	5

PROS Awesome sounds in a shockingly convenient and simple package.

CONS Mix and sample knobs lack visible setting indicator. Moderate to high sample-reduction settings add difficult-to-manage noise.

HEAR *this pedal at premierguitar.com/jul2014*

HOTONE
Opto Tremolo

By Jason Shadrick

Hotone's Skyline Opto Tremolo dishes out modern warble in an extremely tiny footprint. It's a perfect micro-pedal for the guitarist who likes to travel light without leaving essential effects at home. It includes the controls you might expect (speed, depth, color) plus a hard switch for more stuttering effects. It can cover much stylistic ground, from the classic "Born on the Bayou" setting to the pulsing chords of R.E.M's "Crush with Eyeliner." The controls lose some mojo at subtle settings, but the hard switch compensates for any volume loss. The sweet spot, though, is brisk settings with the hard switch engaged. (Think Pink Floyd's "Money.")

It's a perfect micro-pedal for the guitarist who like to travel light without leaving essential effects at home.

TEST GEAR *Fender Stratocaster, Ruokangas Mojo, Fender '65 Deluxe Reverb Reissue, 65Amps Empire*

RATINGS

$79.99 street, hotoneaudio.com

Tones	4.5
Ease of Use	4.5
Build/Design	4.5
Value	4.5

PROS Shockingly small. Responsive depth control.

CONS Can't run on batteries. Lacks convincing vintage tones.

HEAR *this pedal at premierguitar.com/jul2014*

MXR

Echoplex Preamp

By Charles Saufley

One bonus of using an original Maestro Echoplex EP-3 tape delay is the extra color and bite the preamp puts in your signal. MXR's new Echoplex Preamp pedal is designed to deliver this aspect of the original, solid-state Maestro EP-3's performance in a stompbox: the result is the kind of sturdy, elegant and stupidly simple pedal even a pedal hater can love.

Like the preamp in a Maestro EP-3, the MXR delivers relatively subtle overdrive. I used the pedal on a session with an old Vibro Champ to get extra Crazy Horse-style grind out of a rhythm guitar track. Coaxing the right amount of grit from the little Vibro Champ meant cranking the MXR's single gain knob to just-short of full, if not all the way open, where it sounded fantastic. The Echoplex Preamp's range and potency is much more apparent with a bigger amp. And with a 30-watt, 2x10 blackface Tremolux in the mix, this pedal's impressive capacity for enhancing picking dynamics and adding organic-sounding dirt is easy to hear.

TEST GEAR *Squier J Mascis Jazzmaster, '80s '52 RI Fender Telecaster, '64 Fender Tremolux, '70s Vibro Champ*

RATINGS

$119 street, jimdunlop.com

Tones	
Ease of Use	
Build/Design	
Value	

PROS Easiest-to-use boost/overdrive in the universe. Natural sounding overdrive. Sturdy construction. Responsive to picking dynamics at higher gain levels.

CONS Lacks some range with smaller amps.

HEAR *this pedal at premierguitar.com/jul2014*

PLANET WAVES

NS Artist Capo

By Rich Osweiler

Capo shoppers must sometimes choose between ease of use and adjustability, but the NS Artist offers both. You can operate it one-handed and clamp it to the headstock when not in use, but the clamping angle is more straight-down than on other trigger-style models, and you can tailor the tension via a spring-adjustment dial without removing the capo. Properly placed and adjusted, it provides even (but not excessive) tension across all strings. I barely needed to touch the tuners when I positioned the NS Artist at the 1st or 4th fret. Icing on the cake: an onboard pick holder and a mount for an optional NS tuner.

Capo shoppers must sometimes choose between ease of use and adjustability, but the NS Artist offers both.

TEST GEAR *2005 Larrivee parlor, 1974 Washburn dreadnought*

RATINGS

$16 street, planetwaves.com

Ease of Use	
Build/Design	
Value	

PROS One-hand operation. Even, adjustable pressure across all strings.

CONS None—and it costs just a couple of bucks more than a basic trigger-style model.

FENDER
60th Anniversary 1954 Heavy Relic Stratocaster

By Joe Gore

There's just something special about old guitars. Even painstaking reconstructions that use the original materials and methods can't quite duplicate the complex character of a well-worn vintage instrument.

A common perception, but is it true? Maybe it's time to reconsider. Recent high-end historic replicas from Gibson and Fender manage to provide astoundingly realistic "old guitar" experiences. One example is the "Dutchburst" 1960 Les Paul replica from Gibson's Collector's Choice series, an $8,000 beauty that genuinely feels 54 years old. Another is this 1954 Heavy Relic Stratocaster, created by the Fender Custom Shop in honor of the iconic axe's big six-oh. It's not as pricy as the Dutchburst, though it still commands a daunting $4,720 street price.

Artificially aging instruments with scratches, dings, and tarnish is always controversial—just scan our readers' comments after a relic guitar review! Some players love the faux finishes, while others consider them silly, if not moronic, and this particular relic job may be more controversial than most. (More on that in a moment.) But at risk of spoiling the suspense, let's tackle the big question first: Does this feel and sound like a fine sexagenarian Strat? Oh my, yes.

The Start of the Strat

The most remarkable thing about the original Strat may be how little it's changed since the year Elvis recorded his first crude demo, Eisenhower introduced the phrase "domino theory," and *From Here to Eternity* nabbed the Best Picture Oscar. Despite all subsequent revisions, wise and otherwise, the original Strat stands as a masterpiece of midcentury modernism.

Naturally, the reissue resurrects most of the original details. The ash body, with its period-perfect two-tone burst finish, feels

dry, light, resonant, and responsive—and every bit as "old" as my original '63 Strat. Other "primitive" details include the single-ply pickguard with its eight screws and the 21-fret maple fretboard. The light nitro-cellulose lacquer finish never dampens the bright, resonant body. The most obvious departure from the original spec is a 5-way pickup selector switch in lieu of the original 3-way. Another is the use of modern 6105 "narrow/tall" frets. Less authentic, perhaps, but hey—most players prefer things this way.

There's nothing tricky about the three vintage-style pickups—no overwound bridge pickup for added Texas testosterone, no extra-quacky middle pickup. These generate tonal variation the old-fashioned way: by location. The straightforward approach underscores the brilliance of the original Strat scheme. The neck tone is luscious and warm, but with lots of subtle high-end animation. The bridge setting is unapologetically wiry and bright, but with enough compelling EQ nooks and crannies to keep it from becoming overbearing. And I'm all for the "cheat" of incorporating a 5-way switch, because those iconic mixed-pickup settings never sounded sweeter. (It helps that the guitar arrived with an absolutely perfect factory setup.) Everything feels substantial, lively, and nuanced. You can practically hear Dr. Frankenstein shriek, "It's alive!"

The neck, with its substantial and period-accurate U shape, is stunning. The builders did an amazing job distressing the back of the neck to make it feel as if it's endured tens of thousands of hours of spirited playing. I'd defy any blindfolded guitarist to differentiate this artful replica from the real deal. But please note the use of the word "blindfolded."

Relic-It Ralph?

It's hard to imagine many players objecting to the relic treatment of the guitar's primary contact surface: the back of the neck. The wear and tear just feels right—and practically indistinguishable from the feel of my battered old Strat. Gripping it is like slipping into your softest old slippers.

But other relic job details are more debatable. For example, every player who glimpsed this guitar remarked on the contrast between the pitted/scratched/corroded surfaces and the pristine white of the pickguard. Now, every guitar ages differently, and a review of old Strat photos reveals that some really do have shiny white pickguards. But I've never seen a specimen with absolutely pristine pickup covers and snow-white knobs. It looks even odder when you screw in the whammy bar—the trem arm button has a yellowed, antique ivory look that clashes with the squeaky-clean knobs.

The body's divots, scratches, and punctures appear quite authentic, but there's a layer of varnish applied *over* these factory-inflicted wounds. It's easy to understand why—who wants a splinter in a sensitive body part? But it looks odd to me. Same with the artificial fretboard wear: The highest-traffic frets are worn through to the wood, as on an old instrument. For example, the 10th, 11th, and 12th frets display deep wear only beneath the treble strings. But the contrast between, say, the worn-to-the-bone appearance beneath the third string at the 12th fret and the shiny-as-new surface beneath the adjacent 4th string strikes me as strange. For all I know, Fender based this instrument on a specific model that had aged in exactly this fashion. Yet I suspect that even players who dig modern relic jobs may question some cosmetic choices here.

But again, in the places that really count—the back of the neck, and to a lesser extent, the upper bout—the antiquing is stellar. Same for the chrome saddles and tuners, whose patinas are indistinguishable from those on my '63. The bridge looks and feels old, but not crusty-rusty. It's as comfy as the splendid neck.

There's bonus bling too: The purchase incudes a nice strap, cable, maintenance kit, and a plush, padded tweed case.

The Verdict

This superb guitar feels and sounds as good as any Strat I've played. Its creators have done a remarkable job mimicking the sensual surfaces and nuanced tone of a fine antique axe. The price may seem steep, but you can tell this guitar received many hours of workbench detail work. Personally, I'd have preferred a bit less relic work, and I can't help wondering how much lower the price might be if the builders had antiqued only the all-important back of the neck. But opinions, like wear patterns on old guitars, differ. For some players, this may be a 1954 dream come true. PG

HEAR this guitar at premierguitar.com/jul2014

RATINGS

Fender 60th Anniversary 1954 Heavy Relic Stratocaster

$4,720 street
fender.com

Tones	5
Playability	5
Build/Design	4½
Value	2½

PROS The primal Strat vision in all its glory. Great tones. Great feel. Magnificent neck.

CONS Some questionable cosmetic choices. Expensive.

Uncomplicated Wireless.
Pure Tone.
intellitouch
FREEDOM ONE
Pedal Tuner & Digital Wireless in One.
wire less. rock more.™
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www.OnBoardResearch.com. Monte Montgomery by Sean Berry.

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KEELEY
Seafoam Chorus

By Shawn Hammond

If there's one effect that tends to get a bum rap, it's chorus. Sure, opinions vary, but if you polled players about the least-necessary stompbox, the swishy modulator would be at or near the top of the list. Rationales would cite cheesy pop songs where the guitar is so chorused that it sounds artificial and overproduced. For a long time I felt the same way.

But haters forget what a profound impact judiciously applied chorus has had on timeless tunes in almost every genre. Andy Summers is one of the most respected chorus addicts—pretty much every note he played on Police hits has it. Subtle chorus transformed Danzig's brooding metal anthem "Mother" from a plodding power-chord exercise to a simmering fist-pumper. Chorusing is similarly indispensible to classic rockers by the Cult and Metallica. Nile Rodgers funk fests that have set booties shaking around the globe wouldn't be the same without it. Even Kurt Cobain—Mr. Raw—used chorus.

Yet the stigma remains. So you've got to admire Oklahoma stompbox builder Robert Keeley for diving in with such enthusiasm on his latest pedal, the Seafoam Chorus. He giddily describes the Seafoam as his most exciting design since his popular compressors. According to Keeley, the Seafoam's circuit is based on the notion of combining an IC chip rarely used for such applications—the ES56033—with an opto-isolator LFO. Whatever the methodology, the results are remarkable.

Foaming at the Mouth

Besides the expected rate and depth knobs, the Seafoam includes tone and blend controls, and they're the real keys to this green machine's potential. Turned counterclockwise, blend serves up the Doppler dandiness of vintage-style vibrato circuits. At the other extreme it conjures the Seafoam's watery namesake effect. In between are intriguing blends. (Considering today's chorus ambivalence, it stumps me why the Seafoam's enclosure doesn't proudly shout "Vibrato." Plenty of players who won't go near chorus have a soft spot for other pitch-warbling effects.)

Beach Bums and Rayguns

I tested the Seafoam using a Tele with Curtis Novak pickups, a Danelectro '56 Reissue Baritone, a Schecter Ultra III with a TV Jones Magna'Tron, and a Gretsch solidbody with a P-90 bridge pickup. My test amps were an EL34-powered Jaguar HC50 combo and a 6973-powered Goodsell Valpreaux 21.

Given my predilection for taut tones with plenty of bite, I immediately took to the Seafoam's tone knob. Many chorus pedals—especially vintage-style ones—either have no EQ control or a one-size-fits-all bright toggle. Without adequate tweakability, certain guitars need a level or treble boost to make the chorused signal cut through as well as non-chorused sounds. With the Seafoam, this concern is obliterated.

Thanks to the tone knob's wide range, you can plug in a darker-sounding humbucker axe, set blend to the vibe side, adjust tone to taste, and put rate and depth past noon for a trippy "Black Hole Sun"-style solo. You can then switch to a bright single-coil guitar, tweak the tone again, dial back depth and rate, and add some slow echo for a hypnotic space-rock effect. In other words, the tone knob avoids having to compromise the strengths of either instrument. I can't overstate how effective this control is, especially since the Seafoam's sound becomes brighter as you shift from vibrato to chorus.

Is Maggie There?

When vibrato aficionados get together, the acid test is often, "Yes—but can it do *Magnatone* vibrato? I *thought* not. *Tsk-tsk.*" Keeley doesn't tout this as a Maggie in a box, and it's not. But if you're looking for a neck-snapping, motion-sickness-inducing vibe, you'll find plenty of weirdness here. One of my favorite recipes was conjuring wicked ray-gun sounds by plugging my Dano Bari or my D-tuned Schecter into an EarthQuaker Devices Tone Reaper fuzz, and then into the Seafoam with rate and depth to 2 or 3 o'clock. Bring on the alien invasion!

The Seafoam sounds very good on the chorus side, too. With a clean tone and my Tele's bridge pickup and Jazzmaster neck pickup engaged, I set rate and depth around noon for barely audible motion, perfect for Nile-style funk, and then nudged both higher for undulating '80s new wave tones in the style of the Fixx. It'll also do full-on slosh for your '80s hard rock, or animate grunge tones with aplomb.

The Verdict

Whether you're looking for over-the-top or subtle chorus/vibrato, the Seafoam flat-out delivers. Its tone-connoisseur sonics are remarkably moldable, thanks to the powerful tone knob. With some players or rigs, the blend control's gradual vibrato/chorus taper might feel a bit too subtle. I usually set it to full vibrato, full chorus, or a 50/50 blend, but some players might find other blends invaluable. Headier effect users may lament the lack of an expression control input to alter the LFO rate in real time. (Even vintage-chorus fans might wish the rate knob were sized and positioned for easier foot-nudging.) Tweakers might also wish they could alternate between two or more favorite settings. But those things would cost more money and board space, not to mention sacrifice the simplicity most guitarists prize. When all's said and done, players who prioritize stellar tones, straightforward operation, and economy of scale will be stoked by the quality and power of this compact, easy-to-use box.

HEAR this pedal at premierguitar.com/jul2014

RATINGS

Keeley Seafoam Chorus

$229 street
robertkeeley.com

Tones	4½
Ease of Use	4½
Build/Design	4
Value	4

PROS **Great chorus and vibe tones, ranging from glossy to warm or weird. Exceptional tonal control.**

CONS **Could use an expression-pedal input or strategically located knob for real-time rate control.**

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GUITARS

RETHINK YOUR TONE

SERGIO VALLÍN
MANÁ

"La magia de la Multiac revela en el stage los más íntimos secretos de una guitarra acústica"

The magic of the Multiac reveals the onstage intricacies of an acoustic guitar

Photo: Brantley Gutierrez

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ZON
Mosaic Mojo PJ Passive

By Rich Osweiler

Joe Zon has always had a reputation for building top-quality guitars. But the quality and design ingenuity typical in his instruments doesn't come cheap. And a lot of folks admire Zon basses from a distance—typically in the "just can't swing it" camp.

Most of Zon's instruments are less traditional, but recently, the company released a series of Chinese-built, J-bass-inspired instruments under the Mosaic Mojo name that gives players a crack at a Zon bass for under a grand. Here, we take a P/J-pickup-configured Mosaic Mojo for a spin.

Got My Mojo Working

The ice-blue finish on the Mojo's alder body and headstock is a thing of beauty. I almost always favor a natural finish over paint, but the blue hue on this instrument just looked so right. It's also available in black, white, and red, and there's an available upgrade to an ash body ($200) that offers the choice between a natural-gloss or sunburst finish.

Mosaic Mojos go through a meticulous inspection and setup when they arrive at Zon's shop in California, including Plek'ing and handpolishing the frets. Even after logging some serious

miles in transit, the action and feel was spot-on. Fretwork was excellent too, and there wasn't a hint of a sharp edge.

The 24-fret, 3-piece, bolt-on maple neck is topped with a rosewood fretboard and dressed with classic clay dots for position markers. Up past the 1 9/16" graphite nut, the 2-on-a-side, Gotoh-style tuners feel solid and, with their unique, offset placement, look cool on the tilt-back headstock (no string tree needed here). Though the headstock deviates from J-bass-style convention, the curvaceous body looks and feels as familiar as can be, with its chrome control plate, a Fender-style machined-brass bridge, and a set of three knurled-chrome knobs wired for master volume/blend/tone.

The pair of Aguilar passive pickups includes a hum-cancelling 4P/J-HC in the bridge and a 4P-60 P-bass-style pup in the neck position. (The Mosaic Mojo is available in P/J active, J/J active, or a J/J passive configuration as well, so there is something for everyone.)

At just 8 pounds, the 34"-scale Mosaic Mojo is pretty svelte, which enhances the overall sense of comfort when you play it. The satin-finished neck feels wicked-fast, buttery smooth, and effortless.

Say Hey P and J

To get acquainted with the Zon, I fired up a Gallien-Krueger 800RB head pushing a TC Electronic RS410 cab, plugged in, and set the amp's EQ dials flat. I turned the Mojo's volume and tone knobs all the way up and set the blend dial to favor only the neck pickup.

Aguilar designed the Mosaic Mojo's alnico 5 P-bass-style pickup after closely studying the pickups from a pair of early '60s Precisions. Little surprise then that I was greeted with a recognizable, mellow and clear P-bass sound full of vintage-y warmth, big bottom end, and round high-mids. Whether plectrum picking through rock riffs, or fingerpicking blues lines or country shuffles, the Mosaic Mojo delivered much of the same warm, woody tone that has makes the P-bass such a chameleonic instrument.

Dialing down the blend knob close to halfway (favoring the split-coil) for a 60/40 split between the pickups coaxed definition, and crisp attack from the output, while still maintaining bottom end and volume. By rolling the tone knob down to about 75 percent, I got in a tone space where finger pulling melodic-jazz chords or digging in hard with a pick for fast and furious metal was equally natural.

Like many, I rarely rely on a bridge pickup alone. Still, I rolled the blender all the way back to disengage the neck pup and check it out by itself. Predictably, the tone thinned out and I perceived a volume drop compared to the soloed neck pickup. Hum was not an issue at all, however, and the resulting burpy tones are great for funky textures.

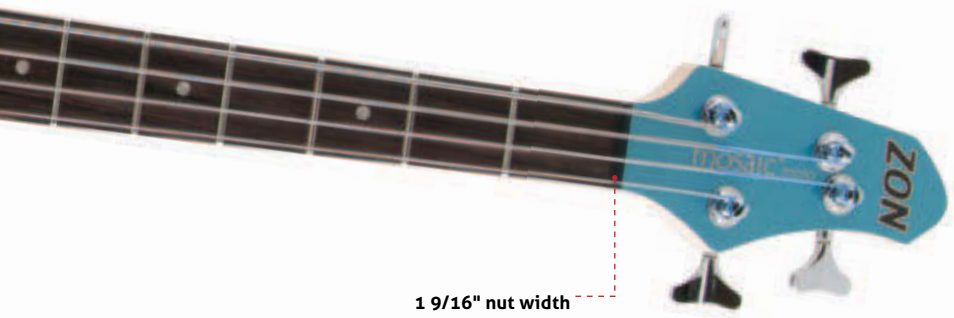
For the most part, however, I favored the neck pickup, blending in just a touch of spice from the bridge, and diming the tone control. The resulting fat, full, defined and punchy goodness is something the Mosaic Mojo PJ delivers with ease.

I was nothing less than impressed with how nice the satin-finished neck felt under hand.

The Verdict

Zon's new take on the tried-and-true J-bass is ready to go to work right out of the case. Yes, $899 is *not* chump change, and borders on pricey compared to other imported J basses or J-style basses out there. But the Zon's neck is one of the nicest I've handled in recent memory. And when you also consider the quality components, attention to build detail, and available tones, the Mosaic Mojo is a solid value that can return your investment in reliable, versatile, sweet sounding performance.

HEAR this bass at premierguitar.com/jul2014



RATINGS

Zon Mosaic Mojo PJ Passive

$899 street
zonguitars.com

Tones	4.5
Playability	4.5
Build/Design	4.5
Value	3.5

PROS Fantastic neck and fretwork, and a very nice pair of pickups.

CONS In a crowded category, the price could scare some off.

CÓRDOBA
Acero D9-CE

By Adam Perlmutter

Córdoba's new Acero guitars are sometimes referred to as "hybrid" instruments. And while that term suggests any number of horrifying mutations of guitar as we know it, the "hybrid" is a marriage of steel-string and Spanish guitar design elements that you could easily miss at a glance. (*Acero* is Spanish for "steel.")

The Córdoba name is well known to nylon-string players, thanks to the company's affordable Spanish-style guitars. But with the introduction of the Acero series—and Córdoba's recent acquisition of Guild from Fender—the company is courting the steel-string player in a big way. So how does this fusion stack up sonically?

Flexible Steel

Among Córdoba's most intriguing nylon-string designs are their crossover guitars—nylon-string models with svelte necks geared toward steel-string players who want to explore nylon-string styles and sounds. But the Acero series crosses over in the opposite direction, adapting Spanish design techniques that Córdoba insists improve sound and playability.

While the neck looks normal enough at a glance, it's built with a Spanish heel, a classical construction technique wherein the body is affixed directly to the neck rather than a neck block. Spanish designers insist the method increases the guitar's resonance because there is less mass, and the connection between body and neck is more direct. (There's at least one disadvantage to this design: You can't remove the neck without destroying the body.)

The top bracing is a hybrid of conventional X-bracing and "the Torres fan," a pattern pioneered by legendary Spanish luthier Antonio de Torres Jurado, the grandfather of the modern classical guitar. The hybrid system is designed to strike a better balance between resonance and rigidity that, in theory, translates into livelier tone.

The D9-CE is built with a classic combination of a Sitka spruce top and mahogany back, sides, and neck. The fretboard and bridge are dark rosewood. The spruce reveals a cool hint of bear-claw figuring. The mahogany back is nicely book-matched and beautifully grained, with a lovely, warm brown glow.

Wood takes the place of plastic and shell for the D9-CEs tastefully minimal ornamentation. The simple rosette and 12th-fret inlay are acacia, a koa-like Asian species. The side dots are maple. The body binding, heel cap, and end strip are mahogany. The D9-CE is a handsome guitar that would not look out of place in a rack of boutique instruments.

Córdoba's craftsmanship is also reminiscent of more expensive guitars. The TUSQ nut and saddle are perfectly notched, and the 20 frets are tidily crowned, smoothly polished, and free of jagged edges. The binding work is clean and perfectly flush. The polyurethane finish is thin and faultless. There's nothing to complain about inside the guitar, either. The bracing and kerfing are smoothly sanded, and there isn't a drop of excess glue.

Spanish Steel Feel

While the medium C-profile neck is easy to grip just about everywhere, the 1.8" nut width provides a sense that there's a *lot* of real estate to work with. Thanks to the Venetian cutaway, it's easy to get to the highest frets, though when playing in this region, the palm sometimes rubs against the neck heel's strap button. (Too bad Córdoba didn't include the button in the case as a user option, as they did with the transparent, self-adhesive pickguard.)

Strummed first-position chords sound warm and rich, if lacking the thunderous power of the best dreadnoughts. Tonal balance is excellent, with taut bass, clear treble, and a nice balance of fundamentals and overtones. You'll also hear impressive sustain and lush resonance, thanks to the instrument's deep natural reverb. It's evidence that Córdoba may be on to something with their hybrid bracing. Those resonant qualities add dimension and ambience to complex, closely voiced chords.

Flatpicked single-note lines sound detailed, and they project enough to work in bluegrass or swing band settings—impressive! Alternate tunings like double-drop D and open G are an absolute pleasure. The Córdoba is a great vehicle for the nuances of fingerpicking.

Amplified Fusion

The D9-CE is outfitted with Córdoba's proprietary Acoustic Fidelity System II (AFS), which incorporates both piezo and microphone elements. The guitar plugs in via a quarter-inch jack on the lower-right bout, which is housed in a plastic enclosure alongside a nine-volt battery. It isn't the most elegant-looking solution, though it's largely out of sight when the guitar is in playing position. The volume, tone, and mic/piezo blend controls are situated on the upper-left bout.

Plugged into a Fender Acoustasonic amp with the controls at noon, the D9-CE sounds much like its unplugged self, with none of the tubby bottom end that can ruin an amplified acoustic sound. Edging the blend toward the piezo side makes for a clearer, more direct sound with a touch of typical piezo compression. The mic end sounds more detailed, but is prone to feedback at higher volumes.

HEAR this guitar at premierguitar.com/jul2014

RATINGS

Córdoba Guitars AceroD9-CE

$850 street
(with humidifier-equipped hard case)
cordobaguitars.com

Tones	
Playability	
Build/Design	
Value	

PROS Resonant, lively, and playable.

CONS The strap button may be awkward.

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PREMIER GEAR

ZVEX Fuzzolo

By Charles Saufley

ZVEX didn't make its good name by taking the path most travelled. The same sense of irreverence that's driven the company from day one guides nearly every creation that emerges from its Minnesota shop. And even as the company enters the raging micro-pedal arms race, where size limitations sometimes prompt conservative design, ZVEX shows no signs of surrendering its adventurous spirit.

Take the diminutive Fuzzolo reviewed here. It's a silicon fuzz that sounds way bigger than it looks, but it also has a sweepable pulse width control (borrowed from ZVEX's Mastotron) that's a simple, surprisingly versatile, and sometimes radical tool for tweaking the rich fuzz output. The sounds you can get with this 2-knob baby monster are both massive and wonderfully mangled—the kind of stuff likely to stoke heavy riffing thugs and lo-fi sonic sculptors alike.

A Little Rolling Thunder

The Fuzzolo's microscopic size did not deter ZVEX from indulging their customary flair for the visual. And though the pedal isn't even 1.5" wide and barely 3.5" long, ZVEX still managed to cram a raging, snorting buffalo, and the flames of some fuzz-driven prairie fire onto a fire engine red enclosure that shows up bold and bright on an overflowing pedalboard. There's a knob for volume level. But the second knob, which on most 2-knob fuzzes would be a gain control, is a pulse width control that changes the waveform from a square wave to a wave with narrow peaks and wide valleys. The fractured sounds from this control are the key the Fuzzolo's brutish-to-curious sonic range.

Lest you think that small size means less horsepower, let us say right out of the gate that the Fuzzolo is loud. Unity gain is somewhere just left of the noon setting on the volume knob, and the pedal gets significantly bigger and badder beyond that.

At the full square-wave setting, which is essentially the "purest" version of the fuzz, the Fuzzolo has a complex, deep, and brawny voice—present and growling in the low-mid zone with a trace of octave-up content. The result is the kind of sassy but muscular tone that silicon Fuzz Face and Big Muff devotees could agree on.

Paired with a neck position humbucker, it's a slice of stony desert-rock heaven—all wooly, rotund and robust with just a hint of Davey Allen biker fuzz on top. Sustain is superb at this setting, *especially* when a humbucker is in the mix. Cutting through a loud band means cranking the output a bit and using your bridge pickup. But in smaller ensembles—even a loud power trio—the Fuzzolo has enough gas to rise above the fray regardless of your pickup setting.

Grinding Sabbath-oid power chords and punky eighth-note barrages sound delectable at pure square-wave settings. They brim with just enough high-mid content to add detail and display a purring low end that nestles nicely with a loud, driving bass line.

Move the wave shape control to 9 o'clock and you start to hear a little clipping in the high and high-mid frequencies. Here, the low-end output becomes a little more compact and you hear a narrower harmonic spectrum in general. This setting still works great for chords—especially if you're a fan of Graham Coxon's lo-fi fuzztones or the sputtering muscle-car grunt of early Dead Meadow.

Up around noon, the effects of the pulse width knob become more pronounced and a bit more hectic. In general, the output's bandwidth is thinner and more compressed sounding. You'll also hear less of the low-frequency drone that defines the full-on square-wave setting. But fast lead lines take on a hip, sputtering,

exploding-amp quality that adds a taste of controlled chaos, attitude, and a succinct, quick responsiveness that rules for Jimmy Page blues flurries, and adds clarity to pull-offs and hammer-ons.

Like any fuzz that gets spitty and gated at high volume, the Fuzzolo produces smoother output from a neck pickup. But if you're clever with your guitar's volume and tone controls, you can effectively manipulate the fuzz voice even further. Reducing guitar volume really enhances the gating effect—especially when the wave shape control is in the third of its range that favors the pulse shape.

With one pickup in the mix you can create fast decaying, near-synth-like tones that add a demented touch to doubled bass lines. But two pickup guitars with four-knob setups (like a Les Paul or Telecaster Custom) let you craft even cooler lead tones with the Fuzzolo. Pairing a wide-open bridge pickup with a neck pickup that's rolled back a notch generates lead tones that sing in the high end while the low end sputters out—a sort of inverse, mirror image of the pedal's gating effect that sounds awesome with a little delay. While these settings have a predictably filth-ifying (but very cool) effect on double-stops and power chords, they can sound quite precise and controlled if you're careful with your picking technique.

The Verdict

The Fuzzolo is one bossy and mean little dude. And the small size is an obvious benefit, whether you're trying to manage an overpopulated pedalboard or just travel light. But what's most striking about the Fuzzolo is how great it sounds regardless of its size. It's responsive, versatile, and sonically varied enough to be the only fuzz you need. And at around 130 bucks, it's a cool way to spice up your sounds with some demented ZVEX magic at the price of many more ordinary and much less space-efficient stompboxes.

PG PREMIERGuitar PREMIER GEAR

HEAR this pedal at premierguitar.com/jul2014

RATINGS

ZVEX Fuzzolo

$129 street
ZVex.com

Tones	4.5
Ease of Use	4.5
Build/Design	5
Value	4

PROS Burly sounding and versatile fuzz voice. Microscopic dimensions.

CONS None.

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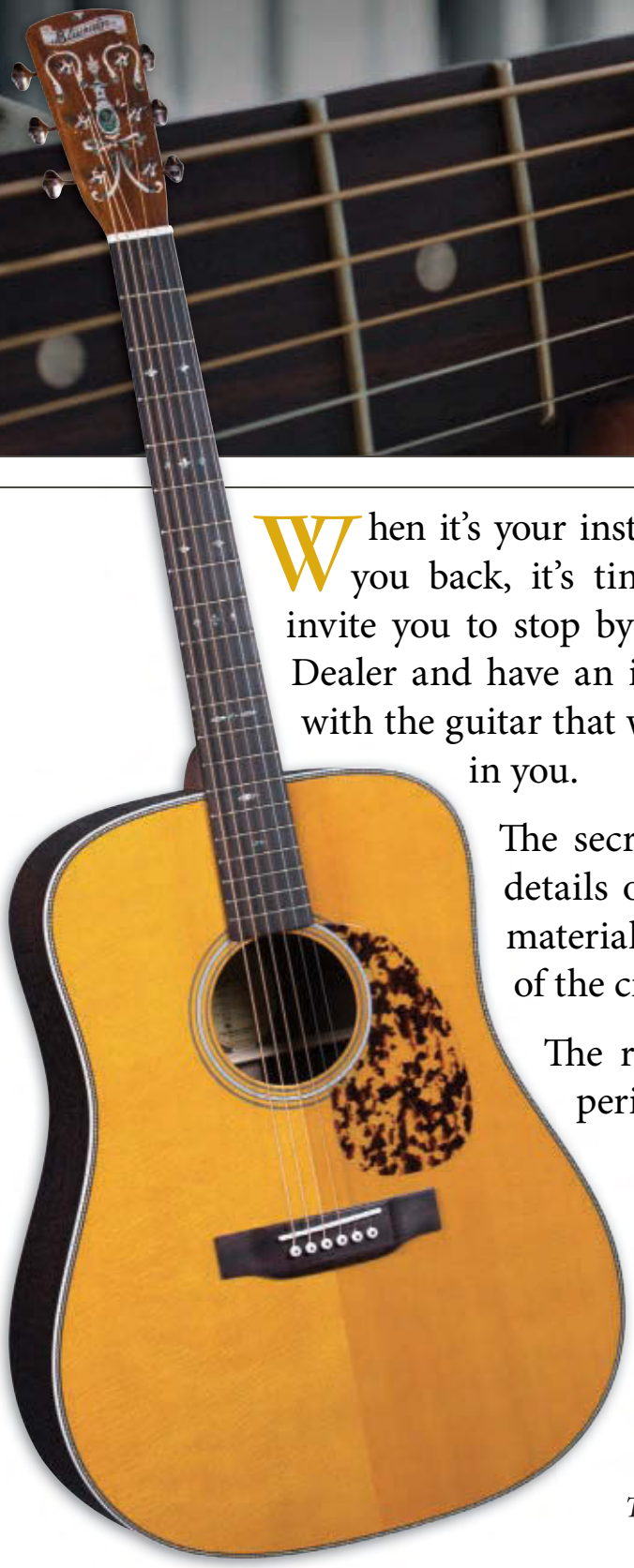

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GJ² Shredder

By Joe Charupakorn

From Eddie Van Halen's striped, hot-rod "Frankenstein" to Randy Rhoads', pinstriped V, Grover Jackson's guitar-building magic helped bring the age of shred alive. For a while, it seemed like virtually every shredder who came on the scene after Van Halen and Rhoads sported a Charvel or Jackson. In 1985, Jackson sold Charvel/Jackson to International Music Corp., and eventually Fender bought the companies. Since then, Jackson has mostly kept a low profile, working behind the scenes with different manufacturers. But in 2011 he jumped back into the fray in a big way, joining forces with industry vet Jon Gold to form GJ². The Shredder reviewed here is one of the most dialed-in products of the duo's shared vision.

Looks That Thrill

Jackson's creations helped fuel the over-the-top decadence of '80s glam metal and the Shredder embodies that aesthetic with stirring recollections of Mötley Crüe and Poison videos. Even the case is an article of glam gluttony. With its blue-and-white vinyl exterior and pale blue velour interior, this is—hands down—the coolest case I've ever come across.

Though the visual inspirations for the Shredder are undeniably ’80s, the guitar is understated in some respects. Our review guitar sports a plain-top basswood body, bolt-on maple neck with bound rosewood fretboard, and chrome hardware. The latter includes a Floyd Rose locking tremolo (recessed to allow an upward pull of about a major third) and Hipshot staggered locking tuners.

Glam, Bam, Thank You Grover

Grover Jackson pioneered compound fretboard design, and you’re reminded why they were such an essential part of his instruments when you play the Shredder. For starters, the 10"–14" radius gives you an ultra-low action without any setup compromises. You can play single-note lines faster and bend to your heart’s content without fretting out. Big chords are also easier to hold for longer periods of time without your hand cramping. F barre chords are as comfortable to hold as 12th-fret three-notes-per-string scale patterns are to blaze through. The fast neck also benefits from a Plek fret milling, which makes the guitar feel ready for the stage right out of the box.

Gettin’ Hot in Here

The Shredder’s core voice is very authoritative, bright, and lively. I gave the Shredder a spin using a Pro Co RAT pedal into a Mesa/Boogie Tremoverb combo’s clean channel, as well as through the Tremoverb’s high-gain channel. It’s immediately apparent that the Shredder wants to be heard loud and clear. Even with a massive amount of gain and the RAT’s tone control almost all the way off, the Shredder has a commanding voice with great definition. Notes are spiked with clarity, and at times the axe seems incapable of getting muddy. It’s not great at producing round, reedy tone, and the aggressive response can make the guitar feel unforgiving in a way that makes you really pay attention to your technique and articulation. Doing so, though, means you have the power to shine in any sonic environment, no matter how loud. The percussive pick attack from 16th-note scale sequences sounds as explosive as rapidly detonating fireworks.

For clean arpeggios, the Shredder is equally detailed and present. (I couldn’t help but think of the intro to Ozzy Osbourne’s “Killer of Giants.”) The Shredder also delivered great note detail across my five- and six–note chord voicings.

GJ²’s proprietary Habanero humbuckers, which are made and wound in-house at the factory, are key to the guitar’s mojo. The 5-way pickup selector switch offers a variety of tonal options. Positions 2 and 4 give you the outer and inner coils of each pickup, respectively, and conjure a single coil-type sound—minus the hum—for a more focused tone. The tones aren’t quite as thin as a true single-coil, but I was able to get more pop out of my picked notes and even a little twang when I picked right over the bridge. Volume differences between these sounds and those from individual humbuckers are subtler and more organic than some guitars that offer these switching options, and in a live, loud situation you can make great use of these nuances.

One curiosity is that the Shredder lacks a tone control. Jackson, after consulting with various players who deemed it unnecessary, opted for a more direct signal path. Personally, I would have really liked a tone control here. I found the Shredder to be a bit bright at times, and I had to walk over to the amp to adjust the treble mid-song at various points. Just turning down the guitar’s volume knob slightly helped tame the highs, but in general, as long as all you EQ the amp and effects conservatively, it shouldn’t be a crucial issue.

The Verdict

Grover Jackson’s innovations helped shape the sound of an entire genre. And while the shred craze has gone through many deaths and rebirths, a killer guitar never goes out of style for the devoted. Tonally, the Shredder might not be the most versatile instrument around, but its playability will let you shine across a surprising range of styles. If you’re looking for a no-nonsense solidbody rock guitar that is well crafted and built to slay when you need it to, the Shredder is idling and ready.

HEAR this guitar at premierguitar.com/jul2014

RATINGS

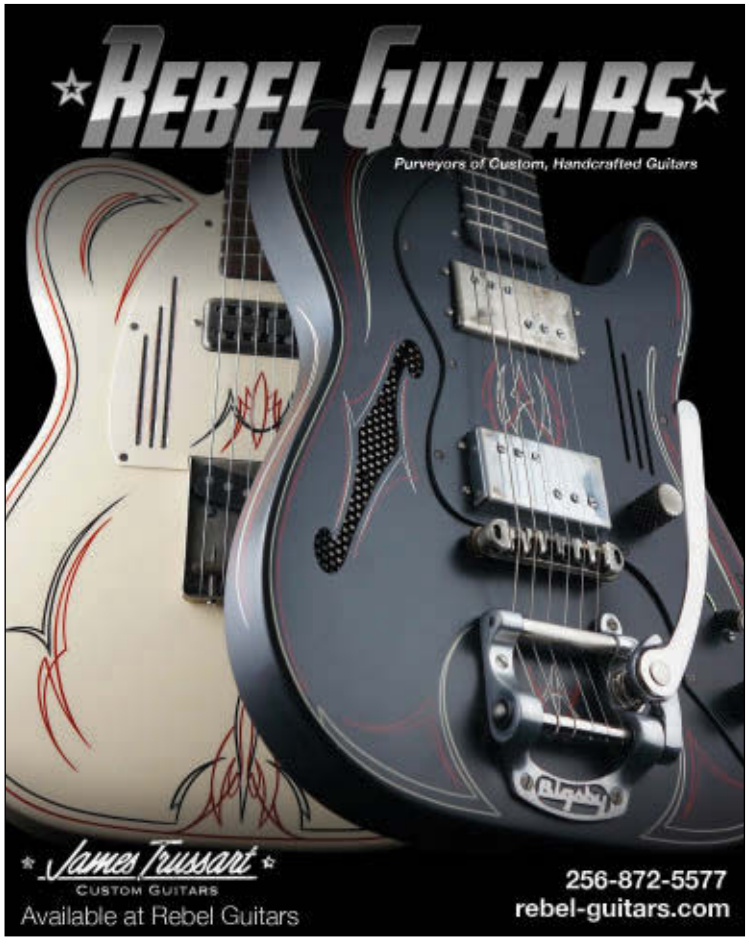
GJ² Shredder

$2,139 street
gj2guitars.com

Tones	4.5
Playability	4.5
Build/Design	5
Value	4.5

PROS Excellent craftsmanship. Effortless playablilty. Aggressive tones and killer response.

CONS Lack of a tone control could be an issue for some.



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ELECTROPLEX
Rocket 42

By Joe Gore

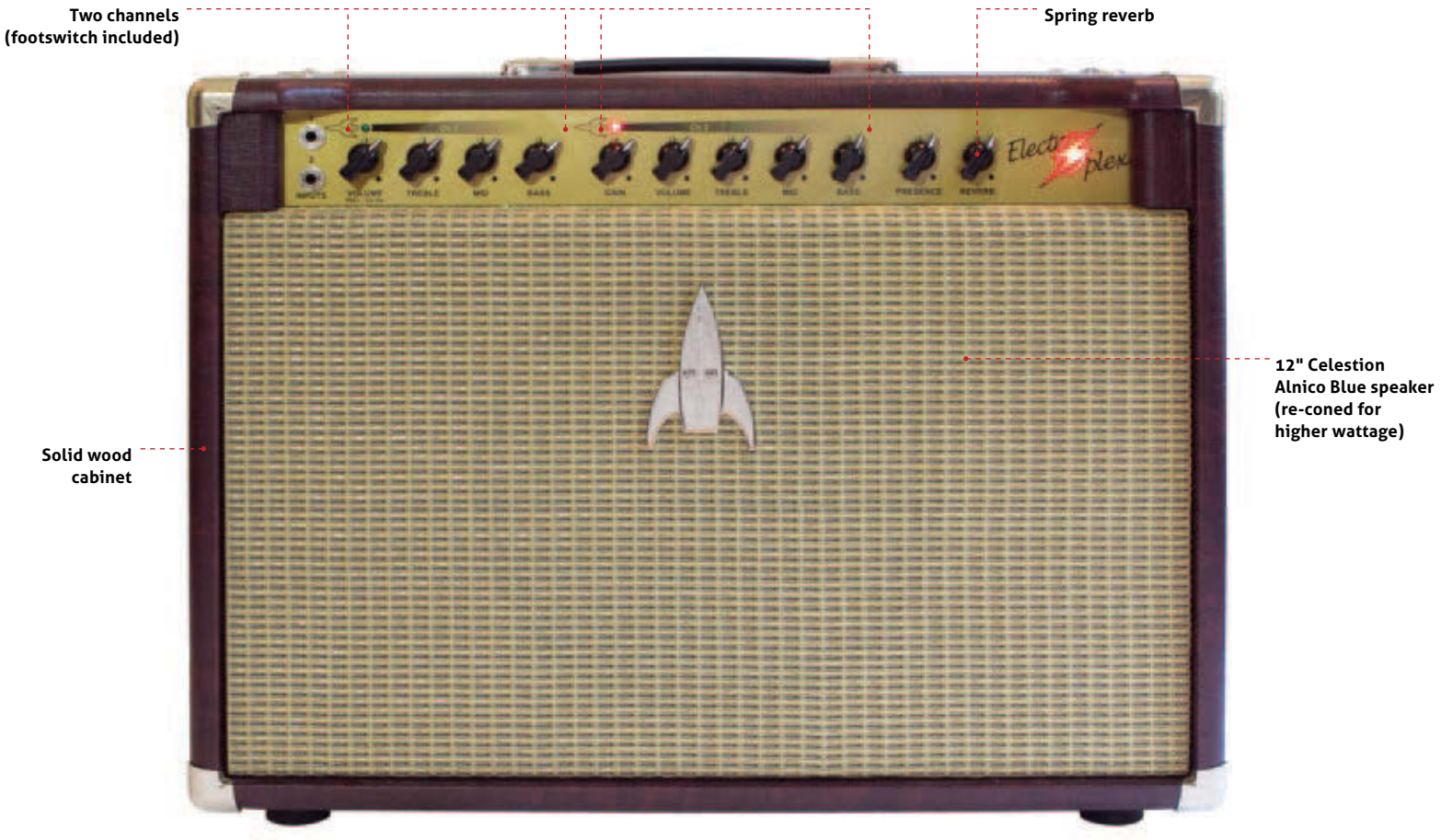
Back in the 1950s Fender made a design decision whose repercussions would endure for decades: While a pair of sweet-sounding 6V6 tubes was sufficient to power the company's smaller amps, when it came to larger models such as the Super and Bandmaster, the solution was not to add more tubes, but substitute a pair of larger, more powerful 6L6s.

And so it was—until the boutique era, when builders began to imagine the Fenders that might have been.

So while Fender never made an amp with four 6V6 tubes, brands including Dr. Z, Carr, and Tone King proved that you could capture the warm tonality of 6V6 Fenders at higher volume levels. Now, Electroplex, a boutique brand reborn after a decade of dormancy, joins the conversation with an exciting new 4 X 6V6 amp, the Rocket 42.

Why 6V6?

Different tubes perform differently in different circuits, so blanket generalizations are risky. Nonetheless, modestly powered 6V6 tubes are relatively prone to pleasant distortion at low volumes, and they tend to have a smooth/pretty/warm character. Larger 6L6s are cleaner and louder, transmitting higher highs and lower lows—qualities often characterized as clear, deep, and spanky. And to some extent, the 4 X 6V6 quest boils down to attaining Princeton-like tones at Super-like levels.



The Rocket 42 has two channels, switchable via included footswitch or push/pull pot. A rear-panel toggle selects between two power modes: 25- and 42-watt. Our review model has a single 12" Celestion Alnico Blue speaker—a compelling British twist on a predominantly American recipe. (The amp is also available with a Celestion Gold at slightly lower cost, and in 2x12, 2x10, 4x10, and 1x15 configurations, as well as a head-only model. Other speakers are available by request.) The amp also has a lovely sounding tube reverb.

Build quality is very good. The hardware and solid-wood cabinet feel sturdy. The electronics are tidily hand-wired on circuit board. The Mercury Magnetics output transformer and custom Heyboer power transformer are top-shelf. The only issues were minor and potentially attributable to rough handling in transit: The amp arrived with at least one noisy tube, and one tube retainer rattled due to a slight excess of spring.

Clean and Green

You know within seconds of plugging into the Rocket 42's clean channel that the amp makes good on its promise of providing small-amp tones at medium-amp volume. At lower levels you get all the sparkling definition of a vintage Fender. As you advance the volume, tones retain clarity, but soften a bit in the upper frequencies, almost as if the 6V6s were specifically designed to prevent icepick tones. These settings work superbly with retro fuzz and distortion pedals, delivering both snappiness and mass. At high volume knob settings, the amp transitions to creamy tube distortion.

A solid-state rectifier bucks the current fashion for retro-style tube rectifiers. In some configurations, a tube's power sag adds welcome compression and complexity. But here, the spankier solid-state response helps the 6V6 color flourish at louder levels. With the volume knob above noon but short of full distortion, the Rocket 42 can sound a bit like an early Twin Reverb, but with prettier highs and fewer face-slapping transients.

Each channel has its own treble, mid, and bass controls, with a global presence knob for both channels. These controls are subtle, musical, and closer in feel to Matchless than vintage Fender. Their ranges are limited to the extent that it's almost impossible to dial in a bad tone, yet they retain great tone-sculpting power. Pouring on bass yields fatness, not dullness. Stripping away bass creates clarity, not thinness. High-treble settings are bright, not brittle, even when playing a brash single-coil bridge pickup. The single reverb control, global for both channels, is similarly refined.

The Celestion speaker adds an interesting wrinkle, but perhaps not the one you'd expect. To accommodate the Rocket 42's relatively high power, Electroplex had the Alnico Blue re-coned by Austin Speaker works, elevating its rating from 15 to 80 watts and substantially altering its timbre. You lose some of the speaker's signature "boxy in a good way" character, though the more open, airy sound suits the amp's voice. It just sounds a bit less British than the words "Alnico Blue" generally suggest.

Into the Red

The hot channel's knobs mirror the clean channel's, but with an added gain control—and a gorgeously effective one at that. You could spend hours sculpting tones just by altering the relative levels of the red channel's gain and volume knobs. Again, it's hard to dial in a bad sound here, though the distortion sounds particularly glorious with gain around 2 o'clock and the volume as loud as you and your fellow musicians can stand. Meanwhile, low gain/high volume settings match the articulate sparkle of the green channel, while high gain/low volume yields darn good distortion at bedroom levels. Whether you want your second channel to unleash hell, or just a modest volume bump, it's easy to dial it in.

The high-gain tones are sonorous and musical, with bold, chiming note attack. Or to put it another way, you can slather on a lot of crunch without flab or harsh overtones. I often failed to realize just how much gain I was using until I'd conclude a phrase with a sustained note or chord and find it blossoming into pretty feedback.

The 42/25-watt toggle isn't as dramatic as you might expect. The differences are more about character than perceived volume. The higher setting makes everything a bit clearer and brighter, while at the lower one, tones are softer, warmer, and more compressed. I suspect most users will switch settings often, not so much to adjust their volume as to make the most of the complementary modes. Besides, the 25-watt setting feels plenty powerful for most stages.

The Verdict

Between its two power modes, dual channels, and exquisitely voiced gain and tone controls, the Rocket 42 is an ultra-versatile, Fender-flavored chameleon that works splendidly with almost any guitar, and is suitable for most non-metal music styles. Its parts and workmanship are excellent. The price, which varies according to speaker number and type, is steep, but the Rocket 42 compares well to other ultra-premium models that sell for even more. It's a winning take on "a Fender that never was." PG

HEAR this amp at premierguitar.com/jul2014

RATINGS

Electroplex Rocket 42

$3,099 street
electroplex.com

Tones	4.5
Ease of Use	4.5
Build/Design	4.5
Value	3

PROS Great small-amp tones at mid-amp volume. Solid workmanship. Superb EQ controls. Musically versatile.

CONS Pricey.

Seagull

Canadian Made. Globally Played.

seagullguitars.com

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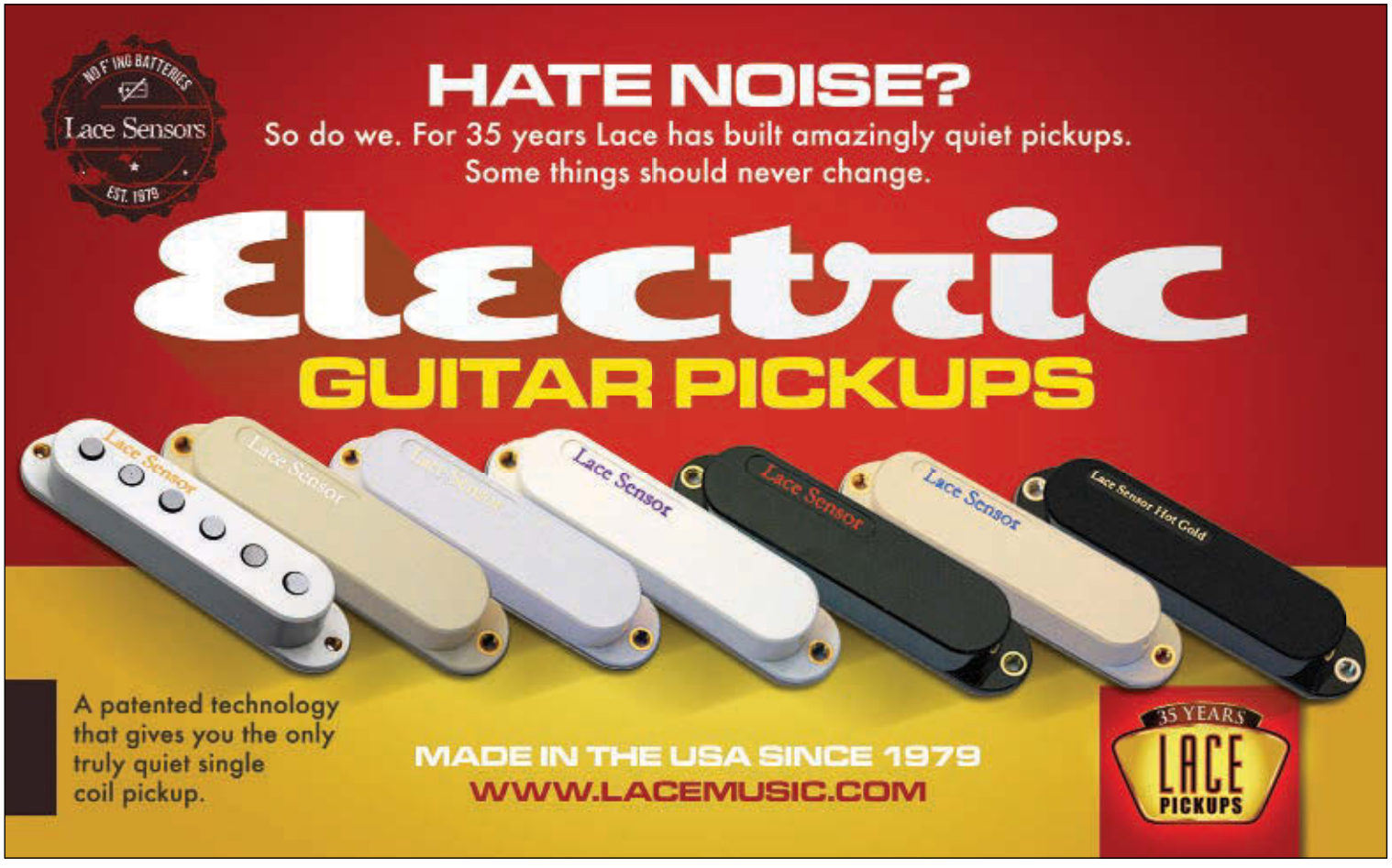
HEIRS TO THE THRONE



EBS
Classic 500 & ClassicLine 210

By David Abdo

Bass amp builders have long labored to replicate the sound and feel of old SVTs and Hiwatts in more cost-effective, portable packages. A recent example is the 500-watt Classic 500 head from Sweden's EBS.

The Classic 500 updates the earlier Classic 450 model, though its design still allows plenty of space for heat dissipation. Removing the back plate reveals cleanly soldered circuitry and a stout toroidal transformer. In an era obsessed with class-D amplification, seeing the ol' donut made me smile. The head weighs in at a manageable 31 pounds and has both a top handle and sturdy metal side handles, making transportation a breeze.

The front panel is simple yet flexible. There's a pre-EQ character switch—the pre-shaping filter found on many other EBS amps. Engaging the switch slightly scoops the tone, providing airier highs and a low-end bump. The sound-sculpting options may not be as extensive as EBS's Fafner model, but the Classic 500 offers greater midrange flexibility. In addition to bass and treble shelving controls, there's a pair of semi-parametric midrange knobs that lets you punch, pop, and cut through a mix, or mellow out harsh frequencies.

The drive control puts the "classic" in the Classic 500. It's a class-A tube emulator that provides up to 30 dB of extra gain for a touch of tonal warmth—or *seriously* hairy bass sounds.

The rear panel includes two 4 Ω speaker outputs with Speakon jacks, wired in parallel. In other words, you can combine

multiple cabinets, so long as they don't go below a total resistance of 2 Ω. There is no effect loop.

We evaluated the Classic 500 with EBS's new ClassicLine 210, an 8 Ω rear-ported cab that can be positioned horizontally or vertically and stacked with other cabs in EBS's ClassicLine series. Weighing in at 36.5 pounds, the cab houses two 10" speakers and a 2" tweeter. Its rugged, multi-laminated plywood frame sports vinyl covering and a retro-looking grille.

Electric Bass Sweetenin'

With its EQ flat, the Classic 500 transmitted the sound of a 1964 Fender Jazz bass with immediacy and a balanced timbre that veered toward the highs. This tone sounded great on a horn-band gig, giving my fingerstyle bass lines a punchy foundation and a slight edge to cut through the mix. The character switch provides plenty of pop and booty. And when it came time to jam out on Sly and the Family Stone's "Dance to the Music," I cranked the drive to cop Larry Graham's overdriven bass break. It would have been nice to have a footswitch to engage the drive, but it was easy enough to dial up with my right hand while hammering-on with my left.

The midrange section seemed to transform a Nash P-style into Barry White. A low-mid boost and a slight upper-mid cut provided an articulate warmth and throaty growl reminiscent of the velvety crooner. This tone excelled in soft ballads and R&B classics.

Admittedly, I have yet to encounter any emulator that *totally* nails the sound and feel of playing with tubes. That said, the Classic 500 gets pretty darn close. By tweaking the drive and EQ, I was able to find a tone similar to a '70s B-15, with just a little bit of breakup. The notes may not "blossom" exactly as they do on a tube amp, but EBS's emulator outshines many in its class.

To hear the Classic 500 with bigger cabs, I went for the gonzo, classic-rock setup and connected it to a pair of 4 Ω SVT 8x10s. I turned the master volume to 3 o'clock and pulled the 5th string of a Ritter R8 Singlecut. The sensation can only be compared to Michael J. Fox getting blown away by the giant speaker in *Back to the Future*. After an hour of noodling, jamming, and pissing off everyone around me, I can safely report that the Classic 500 won't leave you hungry for power.

The Verdict

The Classic 500 earns its name with classic style and classic tone. Pair it with the great-sounding ClassicLine 210 for a powerful rig that can handle almost any gig. It may not satisfy the pickiest of tube fanatics, but the amp's versatile tones suit many styles. If you've been contemplating an EBS rig, this duo is a killer starting point.

HEAR this amp at premierguitar.com/jul2014

RATINGS

EBS Classic 500

$999.95 street
ebssweden.com

Tones	4.0
Ease of Use	4.5
Build/Design	4.0
Value	3.5

PROS A simple, versatile amp with a taste of tube tone.

CONS No effect loop. A tad pricey.

RATINGS

EBS ClassicLine 210

$499.95 street
ebssweden.com

Tones	4.0
Ease of Use	4.0
Build/Design	4.0
Value	4.0

PROS Cool looks. Clean tone. Great design.

CONS You may want to buy two.

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PREMIER GEAR

HERMIDA
Dover Drive

By Joe Charupakorn

Alfonso Hermida's Zendrive is the landmark boutique pedal that kicked Hermida's effects-building career into overdrive. Based on Robben Ford's Dumble tones, the Zendrive captured the blues/fusion icon's sound so convincingly that Ford himself used it to drive rented tube amps on tour. When the news got out, demand soared, and Hermida partnered with Lovepedal's Sean Michael to ramp up production.

Drive Down Memory Lane

The latest Hermida/Lovepedal creation is the Dover Drive, inspired by the tube-driven B.K. Butler and Chandler Tube Driver pedals that have powered everything from David Gilmour's late-model stadium sound to J Mascis's power jangle to Eric Johnson's violin-like tone. The Dover Drive's tube-free design might mean it can't deliver *all* the magic of an original Tube Driver, but it's got a unique vibe, and is a killer all-around pedal that covers everything from mild overdrive to Fuzz Face-like assault.

With its name sandwiched between two horizontal lines in black and white and all caps, the Dover Drive pays visual homage to the Chandler Tube Driver. But its tubeless design, compact enclosure, and simplified tone control depart from the original.

I paired the Dover Drive with a P-90-equipped Gibson Midtown Standard, an Ernie Ball/Music Man Axis Sport with humbuckers and coil-splitting options, and a Mexican-made Fender Stratocaster. My test amps were a Mesa/Boogie Blue Angel and a vintage blackface Fender Deluxe Reverb.

Smooth as Silk

Eric Johnson tends to use modest high and low EQ settings on his Tube Driver, and the Dover Drive highlights that voice. And while the name might imply that the pedal is based on Johnson's iconic "Cliffs of Dover" tone, Hermida says he sought inspiration from the guitar sound on Johnson's "Righteous."

The Dover Drive excels at low-gain dirt. With the gain control at minimum, it adds grit and weight to single-note runs and generates the perfect breakup for harmonically rich double- and triple-stops. It's super dynamic and responsive at these cleaner settings, adding sparkle to folk chords or generating grinding AC/DC rhythm sounds, depending on how hard you attack the strings.

The pedal's character changes noticeably when you bump the gain up to 11 o'clock. Single notes take on a vocal quality ideal

for lead lines and low-register, boogie-type riffs. Chords take on a cranked-amp character that can be further sculpted with pick attack. And though the Dover Drive has a mid-heavy voice, triad-based riffs on the A, D, and G strings remain clear.

The Sweet Spot

The sweet spot for smooth sustain lives at about 1 o'clock on the gain knob, where the pedal becomes perfect for Johnson-esque pentatonic flurries and Allan Holdsworth-type legato runs. Maxing the gain adds fuzzed-out aggression for raunchy, somewhat compressed chords. But even at these high-gain settings you can easily tame the Dover Drive—its ability to remain touch-sensitive and dynamic through its gain range is remarkable. Lighter pick attack produces beautiful clean tones (although with the gain cranked, you can *feel* the pedal straining to remain polite). Digging in makes notes scream. It's a joy to have such a broad range of sounds available via simple guitar volume and tone adjustments.

While the Dover Drive's dark, creamy voice can make for an effortless-feeling playing experience, sometimes you want more attack and cut. Fortunately, unscrewing the back plate reveals a bias-adjusting trimpot that can alter the pedal's silky/buttery character to an edgier, more David Gilmour-like sound. Given the trimpot's sound sculpting skills, it's a shame it's not an external control.

The Verdict

The Dover Drive delivers much of the mojo of Eric Johnson's violin-like Tube Driver tone—and the current price of vintage Tube Drivers makes the Dover's $199 price palatable. But focusing exclusively on Eric Johnson-like attributes overlooks that fact that the Dover Drive is a touch-responsive, dynamic, and wide-ranging overdrive suitable for any player who loves transitioning from "smooth" to "growl."

PG PREMIERGuitar PREMIER GEAR

HEAR this pedal at premierguitar.com/jul2014

RATINGS

Hermida Audio Technology Dover Drive

$199 street
lovepedal.com

Tones	♥♥♥♥
Ease of Use	♥♥♥½
Build/Design	♥♥♥♥
Value	♥♥♥♡

PROS Authentic Tube Driver-like sounds. Superb dynamics and sensitivity.

CONS The powerful bias control is only adjustable via internal trimpot.

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LOGIDY
EPSi Convulution Reverb

By Joe Gore

If you've used software or hardware amp modelers, chances are you've used impulse responses. The technology, developed by Sony at the end of the last century, is one way that modelers mimic various mics, cabinets, rooms, and outboard gear. Impulse responses (IRs) are recordings of test tones created in the spaces or through the gear being modeled. IR reverb players compare these recordings to a theoretically dry version, and then apply the resulting variables to any audio you pump through them. Voilà—your guitar can sound as if it was recorded in the Taj Mahal. Or a sewer. Or through a $5,000 outboard reverb unit.

Most modelers don't let you load your own IR files, though you can do so using dedicated software plug-ins such as Audio Ease's Altiverb and Space Designer in Apple's Logic Pro. And now you can add this technology (also known as convolution reverb) to your pedalboard, thanks to Logidy's EPSi—the first load-your-own IR stompbox.

EPSi reads IR files from an SD memory card, and ships with a 1 GB card containing hundreds of shareware impulse responses. (Many more are available online.) Quality varies, but with searching and a bit of patience, you can assemble a fine IR library at no cost. (And if you have an IR-making utility, like the ones included with Logic and Altiverb, you can make and load your own IRs.)

EPSi is a solid 4" x 4" stompbox with minimal controls: just a terse, three-character LED, a data knob, an enter button, and a bypass footswitch.

Your guitar can sound as if it was recorded in the Taj Mahal. Or a sewer. Or through a $5,000 outboard reverb unit.

SD card storage

To select a new sound, simply scroll to the desired IR number and press enter. Same with altering the reverb time or adjusting the wet/dry mix: scroll and enter. This system works fine, just don't count on changing tones mid-song, or even mid-set. But hey, even if you use only one IR per show (a nice juicy spring to soak the sound of a no-reverb amp, maybe?), you may find EPSi useful in performance.

But the studio is where EPSi really shines. You have access to hundreds of sounds at once, or even thousands with a larger, pricier memory card. You can also swap between cheaper cards. (You can buy 1 GB cards for less than five bucks each.)

Swapping cards may be a good strategy. There are two versions of the latest EPSi software, which the pedal reads from the SD card along with the IR files. One is optimized for reverbs of up to six seconds, and the other is geared toward mimicking speakers and cabinets. (Yes, you can plug your amp's direct audio output into EPSi, record direct, and clone the tones of countless cabinet/speaker/mic combinations with startling realism.) To switch software, just power up with the appropriate card inserted. Like most powerful digital effects, EPSi requires AC power, but thankfully an adapter is included.

To learn more about using IRs in the studio, check out the recent *PG* article "Impulse Control: Mastering Fake Spaces." It covers some extreme sound-design scenarios and includes a link to download some cool and free IR files.

CLICK HERE TO HEAR this pedal at premierguitar.com/jul2014

RATINGS

Logidy EPSi Convolution Reverb

$199 direct price
logidy.com

Tones	4.5
Ease of Use	3
Build/Design	4
Value	4.5

PROS Brings DAW-level sound design to your pedalboard.

CONS Tough to switch sounds on the fly.

Question & Obsession

Israeli jazz guitarist Oz Noy joins PG *staff in playing voyeur, because who wouldn't want to watch their musical heroes in action? And to change things up, guitar fiends, we bring you our "current obsessions."*

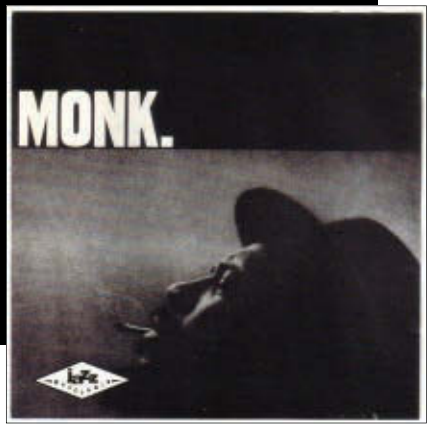
Q: *Which band/musician would you give anything to see work in the studio and why?*

Oz Noy

Guest Picker

A: I have two. The Beatles, just to see how they were able to go around all the technical limitations of recording at that time and came up with all these brilliant-sounding records, especially the later years. And Peter Gabriel—I want to see how they recorded "Sledgehammer." To me, that is the most amazingly produced song of all times.

My current obsession is: Trying to play jazz standards, especially Thelonious Monk songs with Travis-picking style.



Andy Ellis

Senior Editor

A: Daniel Lanois and Black Dub. I want to discover how Lanois can take a pulsing live-in-studio band performance and transform it into a psychedelic soundscape using effects and remixing techniques. If you haven't heard Black Dub, check out "Ring the Alarm."

My current obsession is: Putting nickel-wound strings on my flattops instead of the typical phosphor bronze acoustic sets, like Tony Rice does.

Check out our Facebook page at ***facebook.com/premierguitar*** *to comment on our question of the month for your chance to be our featured Reader of the Month in* Premier Guitar

Tessa Jeffers

Managing Editor

A: Frank Zappa. His Utility Muffin Research Kitchen had to be like going to the theater. I'd be mesmerized by his art-mock vocals about dental floss, unfathomable guitar work, his eccentric genius for off-the-wall sounds like kazoo, and that facial hair!

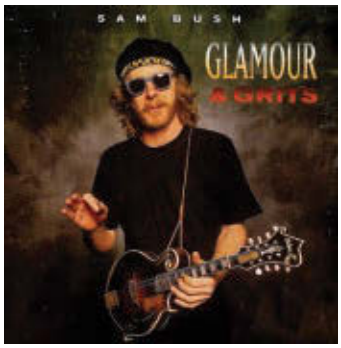
My current obsession is:
Experimental guitar ideas in soul, hip-hop, and R&B songs like the opening fuzz riff on Miguel's "Simplethings." (And Zappa.)

Jason Shadrick

Associate Editor

A: Phish's *Joy* album simply because of how fresh it must have felt in the studio after their lengthy hiatus. Plus, I would totally try to get the scoop on why Trey digs that vintage Ross compressor.

My current obsession is:
Mandolin masters like Chris Thile and Sam Bush. My wife and I are working on getting our mando chops together.



Colton Wedeking

Director of Marketing

A: The Foo Fighters. Dave Grohl is by far my favorite musician. He's an amazing songwriter and has killer chops. When 2011's *Wasting Light* was released I was totally hooked. I'm pumped to see what they do with their upcoming album this fall.

My current obsession is:
Flashy guitars. I've been crushin' hard for a Gretsch Sparkle Jet or some kind of funky-looking semi-hollow from Gretsch.

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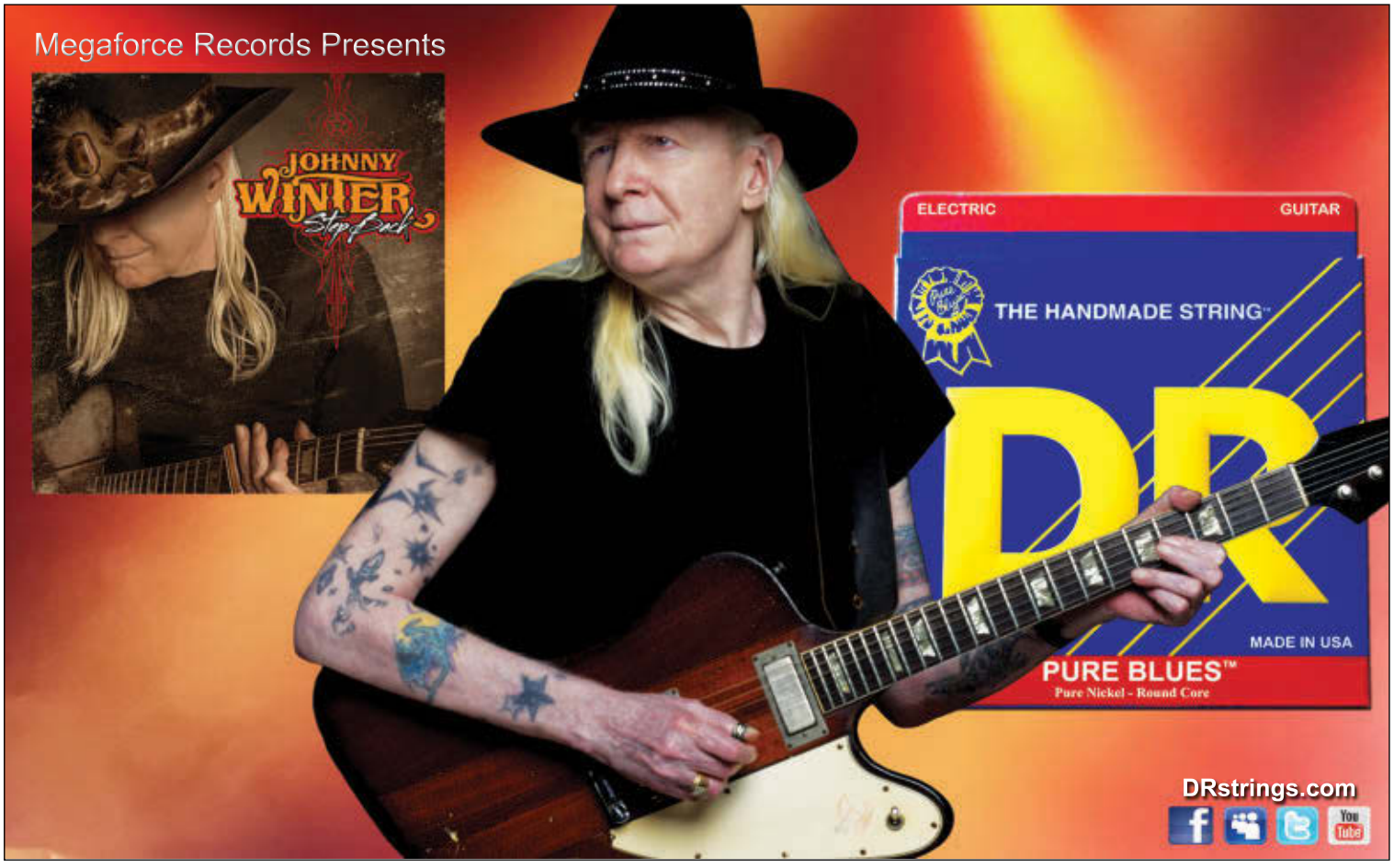

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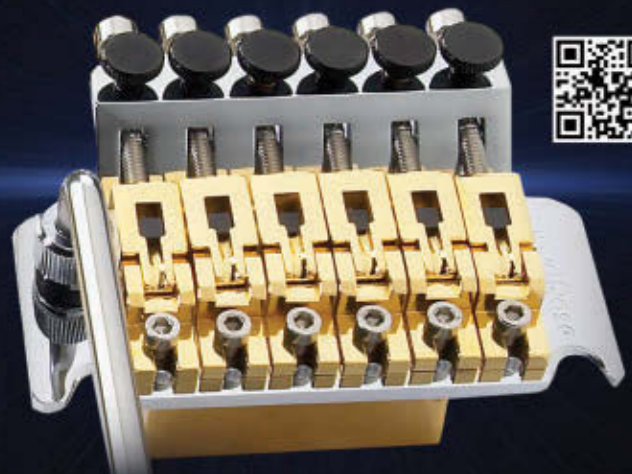

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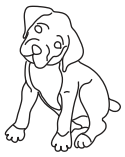

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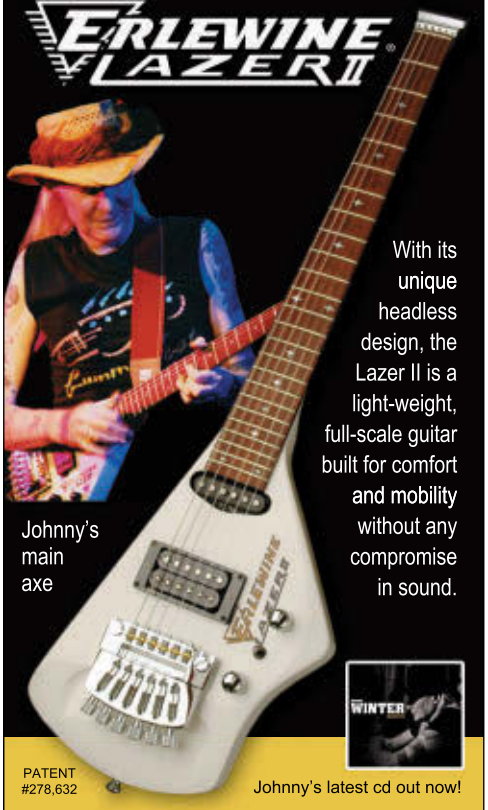

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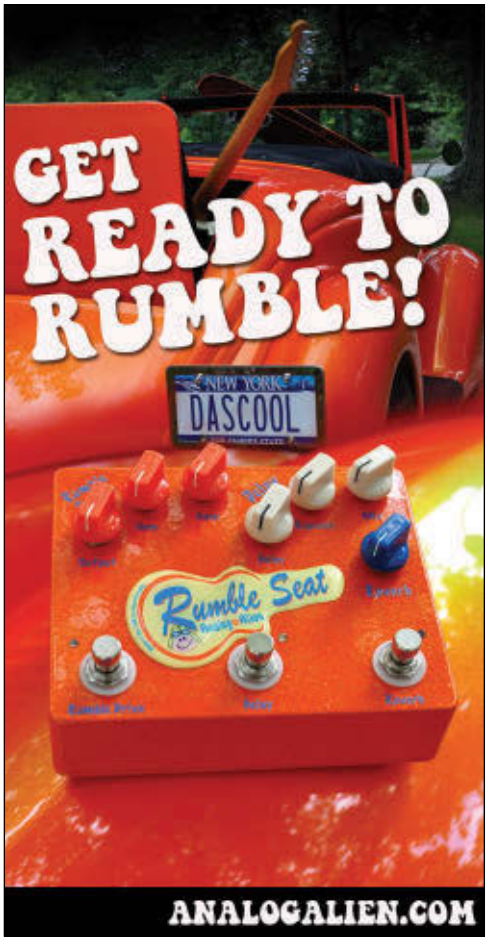

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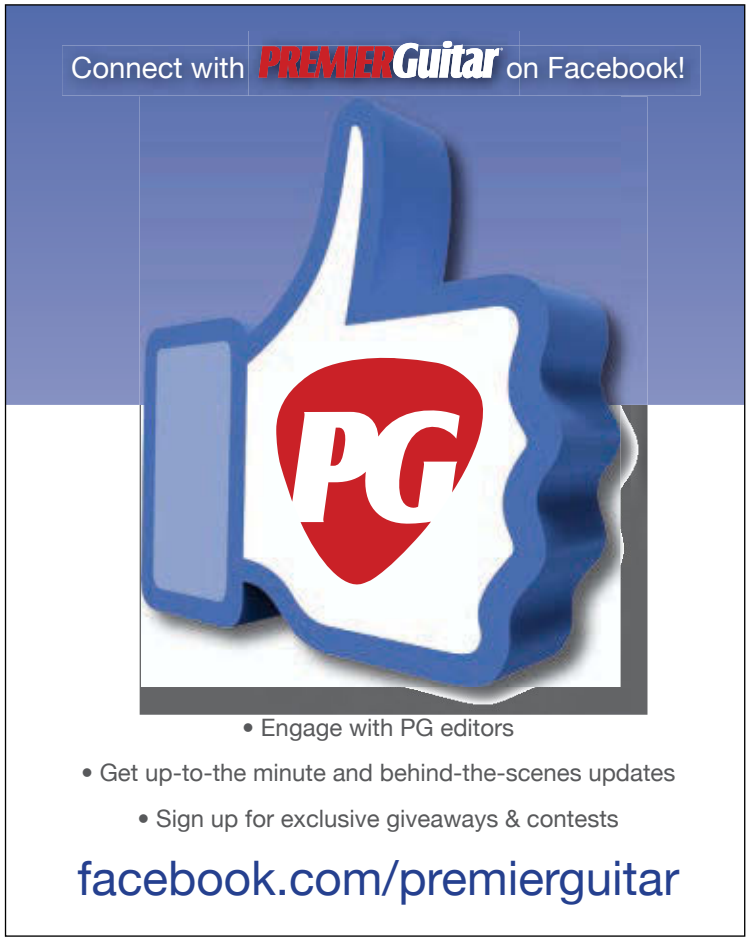

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An Axe to Grind

BY JOL DANTZIG

As old mills and factories close around the U.S, a way of life vanishes with them.

Not too far from where I live in New England, an old factory sits quietly alongside the Farmington River. Once upon a time, it was the pride of the townspeople. The company employed most of the town and the products made there were of superior quality and sold around the world. Those were the good times, but now they're gone. Various groups of business people have tried to revive and repurpose the old mill over the years—none to any good effect. There are still some tenants inside and a few businesses continue to turn out some product. But for the most part, bitter and defeated ghosts walk the hallways.

The surrounding town and community was essentially created in 1826 when 24-year-old Samuel W. Collins, his younger brother David, and their cousin William bought a few acres along the river and started the Collins Axe Company in an old gristmill on the property. As the company prospered, the town—now known as Collinsville—grew with it. Collins built more than 190 homes for the workers and a firehouse to protect his mill. For decades it seemed like little could go wrong and the workers felt secure. Collins axes enjoyed a fine reputation for quality, but eventually, changing times and market forces slowly eroded profits and something had to be done. The company changed hands, the new owners shifted to Asian production to remain competitive, and the town never recovered.

I thought about another old axe factory today while cutting up some kindling for the wood stove that heats my shop. The small Fayette R. Plumb Company hatchet I use almost every day still feels good in my hand. Its hickory handle is burnished smooth from decades of use. Most of the original finish on the handle has worn off, and the gold-foil Boy Scout seal is tattered and illegible, but I've had this tool since 1963 when I joined the Scouts at age 11. Somehow, it has followed me through countless moves back and forth across the country, but I've taken it for granted. Even though I have worked in similar factory buildings and shops my entire life, I've rarely thought about the lives and families of the craftspeople who fashioned my little hatchet.

This tool company can be traced back to Jonathan Yerkes, who had been an established Moreland, Pennsylvania, toolmaker since 1856. Yerkes moved to Philadelphia and partnered with a young man named Fayette Plumb in 1887. Eventually, Plumb bought out his partner and the name was changed to the Fayette R. Plumb Company. The company's tools were made to work and made to *last*. Over the next hundred years, they manufactured fine tools in Philadelphia until the company was consolidated with the Cooper Group and manufacturing was shifted primarily to China to cut costs.

How will they feel when they see a familiar guitar with an old name that didn't pass through their hands?

So what does this have to do with guitars? Aside from being the slang term for a guitar, the axe and the factories that make them have followed the same arc we've seen in our industry. It goes something like this: Early innovation, hard work, community, and growth—then a decline and an off-loading of production to foreign shores.

It was just yesterday that I received the news about another old mill shutting down nearby. I worked there for 15 years building guitars under many brand names. You might even own one. I thought about all the people I knew there. Many worked their entire adult lives making instruments in that building. They grew up, got married, had children, and some of their kids later worked there as well. Much of their identity is tied up with making guitars and music. How will they feel when they see a familiar guitar with an old name that didn't pass through their hands?

You can still buy a Plumb or Collins axe, but they aren't made by anyone remotely related to the original crews. Like so many products once made in this country, axes are much cheaper to manufacture in places like Mexico and China. Will those tools stand the test of time? Now, I don't doubt that the people who toil in those foreign factories are fine folks. They deserve a shot at a better life, just like our ancestors did here. It only makes me sad that what remains of all their efforts are the vintage tools that will probably outlive you and me.

Interestingly, my particular Plumb hatchet uses an epoxy resin to attach its head to the handle. The process—which Plumb patented on September 2, 1958—is said to reduce the vibration of the tool overall. That epoxy is still doing its job today, 50 years later. Now, if you'll excuse me, I have an axe to grind.

JOL DANTZIG *is a noted designer, builder, and player who co-founded Hamer Guitars, one of the first boutique guitar brands, in 1973. Today, as the director of Dantzig Guitar Design, he continues to help define the art of custom guitar. To learn more, visit guitardesigner.com.*

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A Dictionary of Musician Idioms

BY JOHN BOHLINGER

Most of us have heard hundreds, if not millions of those trite-and-true musician jokes, such as:

What do you call a beautiful blond on a bass player's arm? A tattoo.

What's the last thing a drummer says before he gets fired? "When are we going to record some of *my* songs?"

But let's not waste time on those old chestnuts. Rather, let's explore funny crap about musicians from a slightly different angle. I'm talking idioms. (Drummers, go look that word up ... we'll wait.)

Half the fun of being part of any subculture is having your own language.

Half the fun of being part of any subculture is having your own language. Ever hang out around plumbers and hear the crazy stuff they say? It's hilarious. Turns out, musicians have even funnier stuff, so I thought: Why not just list a bunch of them and pass that off as my monthly column?

Behold, assembled in one tidy list packed with plagiarism, I give you: *The 2014* Premier Guitar *Incredibly Limited Dictionary of Musician Idioms.*

Faithful readers, please contribute your own musician idioms in this column's comment section at premierguitar.com and/or on PG's Facebook page. With your help, this soon-to-be-auspicious tome of semi-knowledge will be read by musicians for ages to come, thereby expanding our vocabulary of idioms and further alienating the musicians from the normals.

JOHN BOHLINGER *is a Nashville musician who has led the band on NBC's* Nashville Star *and served as musical director of the* CMT Music Awards *for five years. In addition to his "Last Call" column, John recently joined* PG *as our full-time gear demo/Rig Rundown video dude.*

A Russian dragon: A player whose tempo tends to both rush and drag.

A reverse moose: A cool band with a very unpleasant front-person. (Explanation: On a regular moose, the horns are in front and the ass is in back. In some bands, it's the reverse.

A Rolex: A showy drummer incapable of keeping accurate time.

A third for a word: An unethical bit of douche-baggery where producers or artists say they want to rewrite your song before recording it. They then make an unnecessary, minor change and claim a large chunk of the writing and publishing shares for themselves. For example: "Robert, your lyrics are good, but not quite there. Let's change it to 'She's *leasing* a stairway to heaven.' That's *waaaaaaay* better."

Billy goat: A singer who often employs a very wide, fast, unpleasant vibrato.

Crossfade dissonance: A disagreeable harmonic discord caused by a musician combining improvisation with cannabis and alcohol.

Clams: Mistakes made during a performance.

One-man clam bake: A performance in which a single band member makes many mistakes.

Friday-night Red Lobster clam special: An entire evening's performance replete with mistakes played by multiple band members.

Earn while you learn: An unrehearsed, paid gig that forces musicians to discern changes and arrangements in real time as they play.

Facebook foe/Twitter twat: A person who uses social media to post disparaging comments about your band.

Mixing by 2x4: When a front-of-house engineer simultaneously pushes all the faders all the way up, usually near the end of the show.

On/off dynamics: A musician who plays exclusively at full volume (often drummers and/or bassists).

Playing by Braille: 1. Performing on a dark stage where you cannot see your charts and/or instrument. 2. Performing on a drunken stage.

Pitch approximator: A non-fretted instrument: a pedal steel, violin, or Dobro. Used in a sentence: "For the love of cheese, please turn off the pitch approximator in my mix. *I'm trying to sing here!*"

Wire and fire: When you have very little time for a soundcheck—only enough to plug everything in and then dial up the most basic mix before the show.

Plug and play: When you have no soundcheck, just a line check to make sure you're getting signal to the front-of-house.

Plug and pray/throw and go: Throw your gear up on the deck while the crowd watches, plug in your guitar, and pray everything works.

Strong and wrong: When a player does not know how a song goes but jumps in boldly hoping this confidence will fool the audience.

Skeleton key: A pet riff or lick that a musician uses too often. Used in a sentence: "Sitting through John's performance was particularly painful tonight. He used that skeleton key riff in every one of his underwhelming solos."

A♭ minor: What you get when you drop a piano down a mineshaft.

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